A STUDY ON

SANTHUVATHAM

Dissertation Submitted To

THE TAMIL NADU DR.M.G.R Medical University

Chennai – 32

For the Partial fulfillment in Awarding the Degree of

DOCTOR OF MEDICINE (SIDDHA)

(Branch – I Pothu Maruthuvam)

DEPARTMENT OF POTHU MARUTHUVAM

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI – 627 002

MARCH - 2009

ACKNOWLEDGEMENT

I am extremely grateful to God Almighty who empowered me with his blessings and gift of life.

I would like to offer my reverence to my beloved my Parents, my Husband and my Son, who were an epitome of love, sacrifice, encouragement and inspiration

I owe my special gratitude and acknowledgement to the **Vice -chancellor**, the **Tamil nadu, Dr. M.G.R. Medical University** and **Special Commissioner,** Commissionerate of Indian Medicine and Homeopathy and **Joint Director** of Indian Medicine and Homeopathy , Chennai, for permitting me to undertake my dissertation work.

I Sincerely thanks to **Dr. R. Devarajan M.D(s),** Principal and **Dr. M. Dinakaran M.D.(s),**Former principal, Govt. siddha medical college, palayamkottai, Who permitted and initiated this dissertation work.

I Sincerely thanks to **Dr. S. Soundarajan M.D(s)** vice-principal, for permitting me to avail the facilities in this institution to bring out this dissertation work.

Words seem to be inadequate to express my gratitude to Professor **Dr. S. Mohan M.D(s),** Head of the Post Graduate Department of Maruthuvam, Govt. Siddha Medical College, Palayamkottai, for his

valuable suggestions and necessary advice at every step of my dissertation work and have been provided very good guidance during this study for which I deeply thank him.

My grateful thanks to Professor **Dr. Prema M.D(s)** Head of the Post Graduate Department of Maruthuvam for her excellent guidance and encouragement, right from the time of choosing this topic for my study.

I express my whole hearted thanks to **Dr. S. Justus Antony M.D(s),** Lecturer, Post Graduate Department of Pothu Maruthuvam for his kind help and guidance.

My heartful thanks to **Dr. S. Chitra M.D.(S),** Asst. lecturer, for her timely help and guidance.

I would like to take this opportunity to tender my most cardial thanks to **Dr. K. T. Jaya Kumar M.D**., Professor department of Modern medicine for his valuable suggestions in modern aspect.

I express my thanks to **Dr. S. Aadhi Narayanan, M.D.(S),** lecturer, **Dr. D. RajaKumari M.D(s),** Lecturer, **Dr. J. Anjalin Nirmala M.D(s), Dr.Shanmugam M.D.(S).,** Asst. Lecturers, Department of Maruthuvam, who were are helped to me during this study.

I express my sincere thanks to **Mr. M. Kalaivanan M.SC., M.Phill., Lecturer,** and other staffs in department of Modern parmacology, who were helped to me in pharmacological analysis of the trail drug.

I wish to express my sincere thanks to **Dr. V. S. Padma M.B.B.S, DMRD,** Radiologist, **Dr. S. Baheerathi M.B.B.S**, Pathologist, Department of Clinical Pathology, **Mrs. N. Naga Prema M.Sc., M. Phil,** Head of Biochemistry Department, Government Siddha Medical College, Palayamkottai for their contribution in the completion of this work.

I express my thanks to Librarian **Mrs. T. Poongodi, M.sc.,** (Lib. Science), for permitting me to utilize the college library for my dissertation work.

Nothing remain save to express my gratitude to Mr. K. S. Raja, who helped me in taking good photographs and installing the software in downloading the pictures. My thanks for him are not merely proforma and is sincerely offered and well deserved.

Last but by no means least I express my gratitude to **Broad Band Net Café** (**BBNC)** in bringing out this excellent form of dissertation book.

INTRODUCTION

When Wealth is lost

Nothing is lost

When health is lost

Everything is lost

Nature and human beings are the wonderful creation of God. Pray and Praise the God for creating nature which provides land, water, air, resources, and rain for human beings for their better survival. It is the ultimate duty of human beings to protect the nature and live in harmony with nature.

Man is the most wonderful creature of "Nature" when discussing the issue of health, it is common for people in all cultures to talk just about their body, its ailments and the medicines they right to treat their ailments. However health is not merely a matter of the state of the body. Since it is obvious we are much more than just this materials forms.

In "Siddha" system of medicine we can save our body from disease and attain our soul the "Nature". The siddha system of medicine, which has been presented by the **"SIDDHARS"**.

The unique nature of this system is its continuous service to humanity in combuting diseases and in maintaining its physical, mental and moral health, while many of these contemporaries had completed this forces long ago. This system of medicine is purely scientific and the peculiar complex system of science and philosopy. It provides rational method for the treatment of many diseases, which are considered to be obstinate and incurable in other system of medicine.

"SIDDHA" focuses on maintaining a balanced integrated relationship among them. In balance, whether physical, mental or emotional arises when there is a disconnection between the subjective and objective areas of life.

The greatest problem of the world today is how to save the human race from extinction through degeneracy. The 'siddha medicine' palys a vital role in presenting human life on the earth with a robust physique. Health is a positive state of well being that is to say every organ of the body functioning normally and perfect functional balance with every other organ. The condition of the joint movement is also one of the states of health. The joint disease includes the muscles, bones, joints, and soft tissue structures such as tendons ligaments.

The comparative study with other systems of medicine and an analysis based on the results of those studies would help us to find out he oddity, particularity, specialty, peculiarity, singularly, and individuality of siddha system of medicines the modern studies of siddha system of medicines bring to light not only the high level of medical knowledge it had, but also where they missed and how they missed of any reveal many of the forgotten fundamentals the proper appreciation and development which make this system grow to magnificent dimension.

Since olden days, the treatment of Vatha disease, in siddha system has been very much popular and effective. This is one of the miracles of siddha system of medicine. The success of treatment is based on harmony among the physician, pharmacist, patient and medicine.

The author of this dissertation work has selected "**Santhu Vatham**" under the vatha disease explained by "Siddhar Yoogi" in **yogi munivar**

vaidhya chinthamani perunool – 800 and a clinical entity, comparable to polyarthrtis in modern medicine. The incidence of this disease as mentioned as above is increasing so the author has tried to formulate a treatment methodology to treat this disease.

The author's choice of drugs for the clinical study were.

1. **Meganathi Kulligai** – Internally (Ref. Anupoga Vaithiya Navaneetham)
2. **Arrkkathy Thylam** – Externally (Ref. Anubava Vaithiya Deva Ragasiyam).

It is purely safe and free from adverse effects. The author believe that the dissertation work might arise new horizons in their field especially in the treatment of "Santhu Vatham"

AIM AND OBJECTIVES

The disease "Santhu Vatham" produce tremendous pain, discomfort and more complications to the patients. The main objective of the present study is to create an awareness about the siddha field and to high light the efficacy of siddha drugs among the public. With this basic intention in mind the following specific objectives have been undertaken.

- To collect various siddha literatures and modern text books as literal evidences regarding the disease "Santhu Vatham"
- To expose the talent of siddhars in diagnostic principle, to know how the disease Santhu vatham alters the normal conditions under the topic Mukkutram, Poripulangal, Udal Kattugal and envagai thervugal….. To study the clinical course of the disease "Santhu vatham" with keen observation on aetiology, pathology, diagnosis, prognosis, complications and the treatment by making use of Siddha concept.
- To know the extent of correlation of aetiology, classification, signs and symptoms of "Santhu Vatham" in Siddha aspect with "polyarthritis" in modern science.To have an idea of an incidence of "Santhu Vatham" with reference to Age, Sex, Socio-economic Status, habits, family history and climatic conditions.
- To have a detailed clinical investigations.
- To have a clinical trial on **"Santhu Vatham"** with **"Meganathi Kulligai"** internally and **"Arrkkathy thylam"** externally.
- To evaluate the biochemical and pharmacological effects of the trial medicines.
- To use modern parameters to confirm the diagnosis and prognosis of the disease.
- To study the importance of thokkanam, exercises along with the administration of external and internal medicines.
- To have a plan for further studies on this disease.

ABSTRACT

The author had chosen the disease "**Santhu Vatham**" for her dissertation subject, because it is one of the commenst disease in the society, number of sufferers increasing day by day.

Twenty In Patients and Twenty Out Patients of either sex had been selected by the author and they were administered with the trial medicines, **Meganathi Kulligai** 1 tds with honey internally and **Arrkkathy thylam** externally. The trial medicines are subjected to bio-chemical and pharmacological analysis.

At the end of the trial study 45% of In Patients showed good clinical improvement and 50% of In Patients showed fair clinical improvement and 5% of In Patients showed poor clinical improvement. 30% of Out Patients showed good clinical improvement, 55% of Out Patients showed fair clinical improvement and 15% of out patients showed poor clinical improvement.

REVIEW OF LITERATURES

SIDDHA ASPECTS

Definition of Vatham:

Vatham is one of the three humours namely vatham, pitham and kabham and it consists of vayu (Air) and Aahaayam (Sky). The two other dhosas are set in motion by the vatha. In a healthy man the existance of three humours are in the ratio of 1:½:¼ respectively. This ratio is altered when there is a disturbance to the vatha by environmental factors, diet, habits etc., and vatha may be increased or decreased. When the equilibrium state is disturbed, vatha is altered, the other two also altered and leads to vatha disease.

Elements which become THOODAMS in the body.

Aahaayam (Space) Vayu (Air)	Vatha Thodam
Thee (Fire)	Pitha Thodam
Appu (water) Piruthivi (Earth)	Kabha Thodam

FORMATION:

"வாதமாய் படைத்து
பித்த வன்னியாய் காத்து சேட்ப
சீதமாய் துடைத்து"

- தேரையர் மருத்துவபாரதம்

"வந்த கலை முன்றில் வாயுவாம பானனுடன்
தந்த பிராணன் சமானனும் சந்தமுறக்
கூட்டுறவு ரேசித்தல் கூறும் வாதம் பித்தம்
நாட்டுங் கபமேயாம் நாடு"

- கண்ணுசாமியம்

"ஆமெது நாடி நரம்பு யெழுபத்தீராயிரம்
இருப்பான நாடி எழுபதோரோ
யிரமான தேகத்தில் ஏலப்பெரு நாடி
ஏக்கச் சமத்தொழில் ஊக்க தசவாயுக்கள்
தக்காடி என்றே சாரும்"

- யூகி சிந்தாமணி

"இருப்பான நாடி எழுபதோடிரண்
யிரமான தேகத்தில் ஏலப் - பெருநாடி
ஒக்கத சமத்தொழிலை யூக்கதசவாயுக்கள்
தக்கபடி யென்றே சாரும்."

- நோய் நாடல் நோய் முதனாடல்

"சாருந் தசநாடி தன்னில் மூலம் மூன்று
பேருமிடம் பிங்கலையும் பின்னலுடன் - மாறும்
உரைக்க விரற் காற்றொட்டுணர்த்துமே நாசி
வரைச் சுழியோமையத்தில் வந்து"

According to this the human body is composed of 72,000 naadi narambukal. Among this 72,000, the ten are prominent naadies (Dasa naadies). Of these ten naadies, Idagalai, pingalai and suzhumunai are known as moolathara naadies.

Among the ten vayus five are more important. They are piranan, abanan, viyanan, uthanan and samanan.

Abanan in conjunction with idagalai to produce vatha.

Piranan in conjunction with pingalai to produce pitha and samanan in conjunction with suzhumunai to produce kapha.

These three humours or thadhus, ie., vatha, pitha and kapha are the functional principles in the composition and substance of the body.

LOCATION OF VATHA

Below the Navel.

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவிலலாகும்"

- யூகி முனி

Locations:

Vatham lives in,

- Abanam
- Stools
- Idakalai
- Undhiyin keezh moolam
- Kaamakodi
- Hip bone
- Skin
- Nerves
- Joints
- Hair follicles and
- Muscles

Natural properties of vatham:

Function:

- Giving briskness
- Inspiration and expiration
- Functioning the mind, thoughts and body
- Regulation of the fourteen physiological reflexes (Vegams)
- Uniform function of the seven udal kattugal
- Protection and
- Strengthening of the five sensory organs.

Recognition of vatham:

Vatham can be recongised in the body by various ways one among the best in form the pulse.

Pulse:

It is the supreme way of detecting the mukkutrum. It can be felt in various parts of the body. But in practice, appreciation of radial pulse is the best way in diagnosing disease.

Method of pulse reading:

"கரிமுகனடியை வாழ்த்திக்
கைதனில் நாடி பார்க்கில்
பெருவிரலங் குலத்தில்
பிடித்தடி நடுவே தொட்டால்
ஒருவிர லோடில் வாதம்
உயர் நடுவிரலிற் பித்தம்
திருவிரல் முன்றிலோடில்
சிலேத்தும நாடி தானே"

- அகத்தியர் நாடி.

The physician holds the patients hand in supine position. After relaxing the hand palpate the pulse in the radial aspect of the arm one inch below the wrist with the physicians index, middle and ring finger from the thumb respectively.

The pulse felt by the index finger is vatham, middle finger pitham and ring finger kapham.

Location of pulses :

"தாது முறைகேள் தனித்தகுதிச் சந்தோடு
ஒதுறு காமிய முந்தி நெடு மார்பு
காது நெடுமூக்குக் கண்டம் கரம் புருவம்
போதுறு முச்சி புகழ் பத்தும் பார்த்திடே"

- திருமூலர் நாடி நூல்

According to this poem there are ten important parts to feel the pulses.

They are:

- Ankle joint (dorsalis pedis, posterior tibial)
- Kamiyam (femoral A)
- Abdomen (epigastric pulsation)
- Chest (Apical impulses)

- Ear
- Nose
- Neck (Carotid)
- Arm (radial and brachial)
- Eyebrows.

According to “Brahmmamuni” radial pulse is best this can be quoted as,

"பேர்ந்திடவே சகலருக்குங் கரத்தினாடி
பேசினார் பிரமமுனி பேசினாரே”

Rhythm of pulse :

"வழங்கிய வாதம் மாத்திரை யொன்றாகில்
தழங்கிய பித்தம் தன்னிலரை வாசி
அழங்குங் கபந் தானடங்கியே காலோடில்
பிறங்கிய சீவர்க்குப் பிசகொன்றுமில்லையே.”

- குணவாகட நாடி

"மெய்யளவு வாதமொன்று
மேல் பித்த மோரரையாம்
ஐயங்காலென்றே அறி”

- கண்ணுசாமியம்

According to this poem normal rhythm of three pulses is

Vatham – 1 mathirai

Pitham – ½ mathirai

Kapham – ¼ mathirai

Character of pulses:

"வாகினிலன்னங் கோழி மயிலன நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்
போகிய தவளைபாம்பு போலவாம் சேத்துமந்தான்
ஆகிய நாடி மூன்றும் மர்ந்திடிந் சன்னியாமே”

- சிகிச்சாரத்னதீபம்

From this poem:

Character of vatha resembles the walk of swan, hen and peacock, pitha resembles the walk of tortoise and leech. Kapha resembles the walk of frog and snake.

Relationship between vatham and suvai:

Aggravating tastes:

"புளிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்
ஒளி யுவர்கைப் பேறில் பித்துச் சீறும் - கிளிமொழியே
கார்ப்பினிப்பு விஞ்சிற் கபம்விஞ்சு ஞ்சட்டிரதச்
சேரப்புனர் நோயணுகாதே"

- கண்ணுசாமியம்

According to this poem the sour and astringent tastes increase the vatha humour.

Neutralising tastes:

"வாத மேலிட்டால் மதுரம் புளியுப்பு
சேதமுறச் செய்யுஞ் சிறையம் - ஓதக்கேள்
காரந் துவர்கசப்புக் காட்டுஞ் சுவையெல்லாம்
சாரப் பரிகாரஞ் சாற்று"

- கண்ணுசாமியம்

According to this above poem sweet, salt and sour can neutralise the vitiated vatha humour.

RELATION WITH ELEMENTS

Vatham	=	Vali + Aahaayam
Pitham	=	Fire
Kabam	=	Water + Earth.

The vali is present in bitter, pungent and astringent.

The Ahaayam is present is bitter taste only.

The six tastes and their constituent elements are as follows.

Sweet	=	Earth + Water
Sour	=	Earth + Fire
Salt	=	Water + Fire
Bitter	=	Air + Sky
Pungent	=	Air + Fire
Astringent	=	Earth + Air

Fate of three humours:

"அறிந்திடும் வாதமடங்குமலத்தினில்
பிறிந்திடும் பித்தம் பேராஞ்சலத்தினில்
மறிந்திடுமையம் வசிக்கும் விந்துவில்
உறைந்திமிம்மூன்றுக் குறவாந்த லமிதே"

- திருமூலர்

From the above quoting, it is clear that the three humours can be discharged through the following routes.

Vatha : Faeces

Pitha : Urine

Kapha : Semen / suronitham

Classification of vatham:

Vatha can be classified into ten types. This has been said in **Yugimuni 800** as follows,

"முறையாம் பிராணனோ டபானன் வியானன்
மூர்க்கமா முதானனொடு சமான னாகம்
திறமை யாங் கூர்மனொடு கிருகரன்றான்
தேவ தத்த னாடு தனஞ் சயனுமாகும்"

- யூகி வைத்திய சிந்தாமணி.

- Piranan
- Abanan
- Viyanan
- Udhanan
- Samanan
- Nagan
- Koorman
- Kirugaran
- Devadhaththan
- Dananjeyan

Each one is responsible for various actions within the body.

1. Piranan: (Heart Centre)

It refers to the chest and it regulates the respiratory system and helps the digestive system. It is otherwise called as **"Uyirkkaal**"

2. Abanan: (Muladhar Centre)

- The type of vatha corresponds to the pelvic and it is the seat of kundalini energy and controls excretions such as sweating, evacuation of stools, ejaculation of sperms, micturition, menstruation and parturition. (Delivery of child).
- Abana vaayu is one of the 14 physiological reflex actions (Vegas) of the body. When its expulsion is partially or completely obstructed it leads to diseases like vaayu gunmam, kudal vatham, vali vaatham. It is otherwise called as **"Kezhnokkunkaal"**

3. Udhanan: (Throat Centre)

This corresponds to the pharyngeal plexus in the throat region and controls breathing and speech. It is also responsible for the physiological reflex actions like vomiting, hiccough, cough etc. It is otherwise called as **"Melnokkunkal"**

4. Viyanan: (Fore head centre)

It helps in the circulation of energy through the entire nervous system and helps in the movement of various parts of the body. It is responsible for the recognisation of various sensations. It is otherwise called as **"Paravukaal"**

5. Samanan: (Navel Centre)

This corresponds to the solar plexus etc. by balancing the other vayus, the six tastes, water and food. If any one of the vaayus gets affected, this samanan is also affected. It is otherwise called as **"Naddukkaal"**

6. Naagan:

It is responsible for the intelligence of an individual. It helps in learning different arts, singing of good songs etc. It is responsible for blinking, opening of eyes and eye-brow raising.

7. Koorman:

This is responsible for yawning, closing of mouth, yielding strength and also blinking. It helps in closing and opening of the eyes and shedding of tears. It is responsible for the vision.

8. Kirukaran:

It is responsible for the salivation in the oral cavity and mucous secretion in the nasal cavities. It is responsible for good appetite. It helps in meditation. It produces cough and sneeze.

9. Devadhaththan:

It is responsible for the lazziness and also lassitude while waking up. It helps in the movements of the eyeball in various directions. It is responsible for begging, quarrelling, arguing etc., and also for much anger.

10. Dhananjeyan:

It is responsible for the swelling all over the body. It produces sensation of roaring like the sea in the ears. It leaves the body by blowing up the cranium on the 3rd day after death.

Agonist qualities of vatham:

- Dry - வறட்சி
- Cold - குளிர்ச்சி
- Subtle - அனுத்துவம்
- Rough - கடினம்
- Unstable - அசைதல்
- Light - இளசு

Antagonist qualities of vatham:

- Unctuous - பசுமை
- Hot - அக்கினி
- Solid - கட்டி
- Soft - மிருது
- Stable - ஸ்திரம்
- Heavy - பளுவு

Signs and Symptoms of Vatha Disease:

- Pricking pain
- Dull pain
- Aching pain
- Tremors
- Palpitation
- Spasm
- Dryness or dehydration
- Dislocation of joints
- Weakness of the body
- Paralysis
- Constipation
- Oliguria
- Excessive thirst
- Astringent taste predominantly in the mouth
- Excretions like stools, urine, lacrimation, sweat, becomes black in colour.

DECLINED VATHAM

- Vague pain all over the body
- Low-pitched voice.
- Difficulty to do any work
- Reduction of intelligence
- Syncope
- Symptoms of hyperkapha

EXAGGERATED VATHAM

- Constipation
- Abdominal disturbances
- Fatigue
- Depression of sense organs
- Giddiness
- Incoherent speech
- Rigors
- Insomnia
- Fond of eating hot food items
- Emaciation of body with blackish discolouration
- Loss of vigour.

Alteration of vatham:

The types of alterations of vatham.

1. Thannilai Valarchi

Provoked kuttram in its own location is called thannilai valarchi.

Duration: Vatha gets thannilai valarchi during mudhuvenil kalam (Aani-Aadi)

2. Vetruniali valarchi:

Provoked kuttram to other location is called vetrunilai valarchi.

During karkalam (Aavani – Purattasi)

3. Thannilai Adaithal:

Provoked mukkutram neutralizing in its own property is called thanilai adaithal.

Duration:

Vatham gest neurlized during koodhir kalam (Iyppasi – Kaarthigai)

Classification of Vatha Diseases:

In classification we can find different views regarding the number. In **Yugi Vaithya Chinthamani**, Yugi says.

"என்னவே வாதமது எண்பதாகும்"

While ending a verse describing the names of the types of vatha, Yugi again says the number as 80.

"தாக்கான வாதந்தான் எண்பதாகும்"

But in the concluding section of the Yugi Vaithya Chithamani, the number of vatha diseases has been given as 84.

"ஆமப்பா வாதம தெண்பத்து நாலு
அதினுடைய குணா குணங் களடங்கலக"

But **"Siddha Maruthuvam"** says the number as 85. While in description and in the following books as,

- **Astanga sangiraham**
- **Noi nadal noi muthual naadal – part II**
- **Thanvanthri vaithyam and in**
- **Jeeva Rakshamirtham,**

The vatha disease is classified in to 80 types.

In **Agasthiar 2000**,

"எண்பது வாதமிகு மிருவகைப் படுத்துக் காணில்
நண்புறு அரைக்கு மேலே நாற்பது வாதமாகும்
பண்சேரரைக்குக் கீழே பத்துநான் காகுமென்று
வண்டுசேர் குழலினாளே வாதத்தின் கூறு தானே"

ie, 40 types of vatha disease are in the upper half and 40 in the lower half of the body and the total number is 80.

SANTHUVATHAM

Santhuvatham is one of the vatha diseases, which is described in **"Yugi Vaithya Chinthamani"**.

Definition:

The term Santhuvatham denotes all kinds of joint disease caused by the derangement of one of the uyirthathus "Vatham".

In the same literature it is mentioned such type of joint disease as megasoolai under the chapter of "Soolai Noikal". In some other literatures, Santhu Vatham was mentioned in different names as Santhuvali, moottuvali, megasoolai, mudakkuvaayu, Ama vaatham, Keelvayu.

- Siddhamaruthuvam

Santheegasileshmarogam, Santhu Vatham, Soolaikattu, Vatha Soolai, Vayu rogam.

- Vaidya Sara Sangiraham

In **Vaidya Sarasangiraham**, alias **Agasthiyar Vaidhya Kaviyam**, **Agasthiyar Gunavahada Thirattu** and **Thirumoolar karukkidai Vaidhyam 600**, Santhu Vatham was explained in the name of Soolai, because of excruciating pain caused by such diseases.

Since it causes pain in the Santhu or Moottu, it is called as **moottuvali or Santhuvali**.

Restriction of movements and in some cases even immobility of the joints can occur, so it may be named as **Mudakkku Vaayu or Mudakku Vaatham**.

Thus the terms of this disease are named according to the cause, derangement of the Uyirthathu, Kurikunam, site of lesion, complication etc.

They are as follows:

Cause	:	Mega Soolai
Derangement of the Vatha Uyirthathu	:	Vatha Soolai, Santhu Vatham
Derangement of the Kapha Uyirthathu	:	Santheega Sileshma rogam
Kurikunam	:	Soolai Kattu
Site of lesion	:	Moottuvali, Santhuvali, Keelvaayu
Complication	:	Mudakku Vatham

In **TV Sambasivampillai medicinal dictionary** Santhuvatham is described as,

"சந்துவாதம் - பொதுவாக அழற்சியினால்
உடம்பில் முழங்கால் முதலிய பொருத்துகளை
தாக்கி வீக்கம் கண்டு, வலியுடன் கீல்களை
சுற்றியுள்ள சவ்வுக்கு காணும் ஓர் வாத நோய்"

A form generally employed to inflammatory disease acute or Chronic of the whole or greater part of the fibrous structures that constitute the formation of a joint-Arthritis.

"சந்துகள் மிக திமிர்த்து உடம்பெல்லாம்
மிக நொந்து, மயக்கம், வாய் நீரூறல், கை கால்
பூமியில் தரிக்கவொண்ணாது வலியை உண்டாக்கும்
வாதநோய்".

"Rheumatism is characterised by inflammation with the thickening of the fibrous tissues, bodily suffering, giddiness, salivation and unbearable pain in the limbs rendering the patient unable to stand firmly".

Clinical Features of Santhuvatham:

As mentioned in the text of **Yugimuni Vaidya Chindamani**.

"செய்கைதான் சந்துகளு மிகத்திமிர்ந்து
செடமெங்கு நொந்துமே மிகவழற்றி
நைகையாய் நளுத்துமே மயிர்க் கூச்சிட்டு
நாணியே முன்போல நடை கொடாது
மைகைதான் மயக்கமொடு வாய்நீறும்
வரண்டிடுமே நாவுதான டிக்கடிக்கு
கைகால்தான் றரணிதனிற் றரிக் கொணாது
சஞ்சலிக் குஞ்சந்துவாம் வாதங்கேளே"

Santhuvatham is a disease characterised by, difficulty in walking and inability to do the works with hands and legs as usual due to stiffness of joints and pain of the body. Extra articular symptoms associated with this disease are excessive salivation, dryness of tongue, lassitude and lethargy.

"கைகால் பொருத்துகளில் கரடுகட்டி மேனியெல்லாம்
தடித்துப் புண்ணும் வாத பித்த சூலை எனப்படும்"

- வைத்திய சார சங்கிரகம்

Vatha Pitha Soolai causes ankylosis of the joints along with some extra articular lesions like thickening of the skin, ulcers etc.

"நிலையான வாதத்தில் நின்றில் சூலைதான்
குலையான கைகால் குளைச்செல்லாம் புண்போல்
காலையால் வலித்துக் கனத்திடும் கீழ்வயிறு
தலையான மேனிதான் இளைத்திடுமே"

- திருமூலர் கருக்கிடை வைத்திய காவியம்

The condition of Vatha Soolai characterised by aches and pain of upper and lower limb joints, swelling, abdominal pain are associated with emaciation.

"வாதபித்தக் கீழ்வாயுவின் வருங்குறி சாற்றக் கேளாய்
ஏதமார் மந்த மேப்பம் இரைச்சலும் வயிற்றில் நாணும்
ஓதருங் குத்தல் வீக்கம் ஓய்தலின் எரிச்சலுண்டாம்
காதறுமுறக்க மின்மை காய்சலுங் காணுங் கண்டாய்"

- சபாபதி கையேடு

- Indigestion (Mantham)
- Eructation – yeppam
- Borborygmus of the abdomen
- Pricking pain
- Burning Sensation

Swelling of the affected joints, fever, insomnia and lazziness.

According to **siddha maruthuvam** (text book)

This Santhuvatham is mentioned as Keelvayu.

"நாற்றிசைய .....
..... சிதைத்துவிடு முடக்குவாத சூலை போமே"

- யாகோபு சிந்தாமணி

"போந்தானே கால் முடக்கு கை முடக்குப்
பொல்லாத நோய்களெல்லாம் போகுஞ் சொன்னேன்"

- சித்த வைத்தியத் திரட்டு

"ஊர்த்திடவே சூலை மகோதரங்களுக்கு .....
..... தோய்ந்திடவே வலிவாதம் முடக்குவாதஞ்
சொற்பெரிய கமர் வாதத்தில் வாம்"
.....

- சித்த வைத்தியத் திரட்டு

We can infer that the disease of santhuvatham was mentioned by various names, from above siddha literature evidences.

The disease Santhuvatham is characterised by difficulty in walking, inability to do work and is a disorder of joints (Santhu) where bone, muscles, tendons and associated structures binds together, for the purpose of locomotion of the body, caused by deranged humour vaatha. Many literature references reveals above mentioned conditons associated with pathological conditions of vaatha derangement.

"வாதமே வாயுவாகும் வாதமே காலிற்சேரும்
வாதமே கண்ணியோடு மருவிடில் வலிவுமுண்டாம்"

- பரராச சேகரம்

"வாதத்தின் குணமே தன்னால்
வயிறது வீங்கிக் கொள்ளும்
தாதத்தில் மேனி கைகால்
சந்துமே கடுப்புத் தோன்றும்"

- குறியடையாள நாடி

"வாதமே ககித்த போது வாயுவ மெழுப்பு மீரும்
சொல்லவே வாதமது மீறிற்றானால்
சோர்வடைந்து வாயுவினால் தேகமெங்கும்
மெல்லவே கைகால்கள சதியுண்டாம்
மெய்முடங்கும் நிமிரவொண்ணாத் திமிருண்டாகும்
மெல்லவே யுடல் பொருமுன் வயிறுளைக்கும்
விரும்பிய ன்னஞ் செல்லாது விந்து நட்டம்
கொல்லவே நாப்புக்கும் காய்சலுண்டாம்
கூறினார் மாலையமுனி கூறினாரே"

- அகத்தியர் சிகிச்சா ரத்தின தீபம்

Manifestations of vatha vitiations pain in extremities & joints, abdominal distension, swelling, immobilization of body & stiffness, perverted taste, anorexia, fever etc.

"அறிய விம்மூன்றின் தாண்மை சொன்னார் நந்தி
எறிய நல்வாதமெறிக்குங் குணங்கேளு
குறியெனக் கைகால்குளச்சு விலாச்சந்து
பறியென நொந்துடற் பச்சைப் புண்ணாகுமே"

- திருமூலர் வைத்தியம்

This also denotes that the character of vaatha vitiation as aches and pain of joints, arms & legs along with the pain of ribs.

"காணப்பா வாத மீறல்
கைகால்கள் பொருந்தி நோகும்
பூணப்பா குடல் புரட்டும்
மலஞ் சலம் பொருமிக்கட்டும்
ஊணப்பா குளிரும் காய்ச்சல்
உடம்பெல்லாம் குத்தும் வாய்வு
வீணப்பா குதமிறுக்கும்
வியர்வையும் வேர்க்கும் தானே"

- அகத்தியர் ரத்தின சுருக்கம்

With the joint pain, fever, nausea, body aches, pain and constipation are mentioned with excessive sweating

"வாத வீறுள அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோது கட்டுரோகம் சுரமுண்டா மிருமலுண்டாமிருமலுமா முறங்காதென்றும்
.....
தீ தெனவே நரம்பிசித்து சந்துகள் தோறும் கடுக்குந் தினமும் தானே
சந்திர வாத முடம்பு குளிர்தெழுந்தே நடுங்குங் சீதவாய்வாம்
முந்திய குத்தி சிவாஞ் சந்துகள் தோறும் குறைந்து மொழிகள் வீங்கும்
வந்திய தொந்த வாதம் நரம்புகளெல்லா மிசிந்து மலம் விடாது
அந்து அவ்வாகு வாதம் வீக்கமுண்டா முடலிற் றிமிருண்டாமே"

- தேரையர் வாகடம்

Along with above mentioned conditions this stanza indicates vatha vitiation causes cough, loss of sleep and swelling of interphalangeal, tarsal, metatarsal joints and bony prominents & stiffness of the body.

"தக்கவாயு கோபித்தால் சந்து உளைந்து தலைநோவா
மிக்க முரி கொட்டாவி விட்டாங்கெரியும் - மலங்கட்டும்
ஒக்க நரம்புதான் முடங்கு முலர்ந்து வாய் நீருறிவரும்
மிக்க குளிரும் நடுக்கமுமாம் மேனி குன்றி வருங் காணே"

- தேரையர் வாகடம்

Excessive salivation is additionally mentioned here.

Pitha Variation:

In Santhuvatha disease mostly affected types of pitham are sandhikam, Ranjakam, Prasaga Pitham.

In **Gunavagadam Noyin saram** stated,

"திருத்தமாம் வாதத் தோடே தீங்கோடு பித்தம் சேரில்
பொருத்துகள் தோறும் நொந்து போகவேயிடிக்கும் சூலை"

When pitha dhosha associated with vatha causes joint pain. Other factor is kapha, kapha mainly regulates the fluid balance and structural component in all the tissues and organs.

"கூறினோம் சிலேத்மமது சமான வாய்வைக்
கொழுத்தியே சுழிமுனையைப் பற்றி விந்தில்
கீறியே சிரசிலாக்கினையைச் சேர்ந்து
சிங்குவை யுண்ணாக்கு நிணமச்சை ரத்தம்

மீறியே நிறங்கோண நரம் பெலும்பில்
மேவியதோர் மூளை பெருங்குடலில் கண்ணில்
தேறியதோர் பொருத்திடங்களெல்லாஞ் சேர்ந்து
சிலேத்மமது வீற்றிருக்குந் திடங்கண்டாமே"

- மருத்துவ தனிப்பாடல்

When **Vathakapha gets deranged,**

"வளிமையுந் தன்னிலை கெட்டு
வலியுடன் வீக்கச் சுரமும் காய்ந்து
மூட்டுகள் தோறும் முடுக்கியே நொந்து
மூட்டுகள் தன்னில் நீரும் சுரந்து
தாங்கொணா வலியுடன் நொந்திடுமம்மே"

Its manifestation are pain, swelling and fever will associated with unbearable pain of the joints and increased secretion of synovial fluid.

Aetiology of Santhuvatham:

In **Yugi** we cannot find any specific aetiology for santhuvatham, but causes for all types of Vatha disease in general have been described,

"என்னவே வாதம்தா னெண்பதாகும்
இகத்திலே மனிதர்களுக் கெய்யுமாறு
பின்னவே பொன்தனையே சோரஞ்செய்து
பெரியோர்கள் பிராமணரைத் தூஷணித்தும்
வன்னவே வச்சொத்திற் சோரஞ் செய்து
மாதா பிதா குருவைம றந்த பேர்க்கும்
கன்னவே வேதத்தைநிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந்தானே"

- யூகி வைத்திய சிந்தாமணி

Since Vatha is responsible for nervous function, injudicious actions like, theft, unreligiousness, unlowyality, will affect the mind and soul will cause disturbance of Uyirthathu – Vatham

"தானென்ற கசப்போடு துவர்ப்புறைப்பு
சாதகமாய் மிஞ்சுகினுஞ் சமைத்தவண்ணம்
ஆனென்ற வாறினது பொசித்தலாலும்
ஆகாயத் தேறலது குடித்தலாலும்

பானென்ற பகலுறக்க மிராவிழிப்பு
பட்டினியே மிகவுறுதல் பாரமெய்தல்
தேனென்ற மொழியார் மேற்சிந் தையாதல்
சீக்கிரமாய் வாதமது செனிக்குந் தானே"

- யூகி வைத்திய சிந்தாமணி

And also stated that imbalanced diet like increased tastes of bitter, sour, hot and rotten meals, starvation, inappropriate habits, disturbed mind are readily affect vatha and cause disease.

The derangement of vatham occurs under various conditions, they are

1. Environmental factors,
2. Physical factors.
3. Factors of Kanman.

1. Environmental factors:

"ஆடியாதியாய் ஐப்பசி ஈறாய்
அனிலமதற் கோரரசியல் காலம்"

"கடகமுதல் துலாம் வரையில் வாதமாகுங்
கண்ணாடியைப் பசியுமதுவே யாகும்"

- சதக நாடி

According to Sathaganadai the vatha disease are predominant in the months from Aadi to Iyppassi.

2. Physical factor:

"வளிதரு காய் கிழங்கு வரைவிலா தயிலல்கோழை
முளிதயிர் போன்மி குக்கு முறையிலா வுண்டி கோடல்
குளிர்தரு வளியிற் றேகங் குனிப்புற வுலவல் பெண்டிர்
களித்தரு முயக்கம் பெற்றோர் கடிசெயல் கருவியாமால்"

- சித்த மருத்துவம் - சபாபதி கையேடு

According to Siddha Maruthuvam (Sabapathy Kaieyedu) Indicated excess intake of carbohydrate diet, curd, inappropriate diet, exposure to cold increased sexual action will disturb vatha & thus cause vatha diseases.

According to pararasa sekaram:

"தொழில்பெறு கைப்புக் கார்த்தல் துவர்த்தல் விஞ்சுகினுஞ் சோறும்
பழையதாம் வரகு மற்றைப் பைந்திணை யருந்தினாலும்
எழில் பெறப் பகலு றங்கி இரவினி லுறங்கா தாலும்
மழைநிகர் குழலி னாளே வாதங்கோ பிக்குங்கானனே."

- பரராச சேகரம்

Excessive intake of bitter, astringent and salt taste food items, intake of old cooked rice, intake of Ragi like cereals, sleeping during the day and awakening at night induces vatha disease.

"காலங்கண் மாறி யுண்ணுங் காரியத் தாலுந் தண்ணீர்
சாலவே யருத்தி னாலுஞ் சந்தியி லுட்கார்ந் தாலும்
கோலமாம் புளிப்பு நெய்யைக் குறைவற வருந்தினாலும்
வாலவார் முலைநல் லாளே வாதமுற் பவிக்குங்காணே."

- பரராச சேகரம்

Intake of unseasonary, untime diet, excessive infl---amer of water, exposure to add air at evening and excesive intake of sour and ghee induces vatha diseases.

According to **Mani Manthira Vaithya Sekaram:**

"கூறுமொன்று மூன்றுடன் குலவு நாலைந்தேழினும்
குற்றமாம் நலத்தினும் கொடூரம் பண்ணிரண்டிலும்
சேரவே பதன் தானுமோ சீரியம்மனை நின்றிழல்
செப்பொனாத தீமையொடு செய்யு பச்சந்தானும்
நெடுந்துக்க மிக்கவாம் நடக்குந்தாது தொழில் தாம்
நிந்தையாகுங் கீல்பிடிப்பு நீடுமெய்யில் தோன்றுமாம்
காரியங்கள் சேமதாங் கல்வயது குறையுமாம்
கண்டுணர்ந்து கணிதவல்லோன் கருத்துடன் செப்பினாரோ"

- மணி மந்திர வைத்திய சேகரம்

Ref - Heritage of the Tamil siddha medicine

Certain position of planets at certain period of human life will produce keelpidippu and cause vatha vitiation.

3. Factors of Kanmam:

According to **Agathiyar Kanma Kandam 300:**

"நூலென் வாதம் வந்த வகைதானேது
துண்மையாய்க் கன்மத்தின் வகையைக்கேளு
காலிலே தோன்றியது கடுப்பதே
கைகாலில் முடக்கியது வீக்கமது
கோலிலே படுகின்ற விருட்சமான
குழந்தை மரந்தனை வெட்டமேல் தோல்சீவல்
நாலிலே சீவசெந்து கால் முறித்தல்
நல்ல கொம்பு தழை மறித்தல் நலித்தல் காணே"

- அகத்தியர் கன்ம காண்டம் 300. பாடல் - 56.

In Siddha system many disease are due to Kanmam which means the deeds or bad committed by an individual in his previous and the present births. The genetic dispositions of certain disease are probably the result of Kanmam. Kanmam may also precipitate Vatha disease according to **"Agasthiar Kanma Kandam 300"** verse 56.

Cutting of young green living trees, breaking the legs of living beings, cutting the branches of a living tree etc. leads to vatha disease. These deeds are detrimental to the fellow beings and such Psycosocial aspect of an individual implies psycogenesis of the vatha disease.

Pathology of Santhuvatham:

"சூலை வரலாறு தன்னைச் சொல்லக் கேண்மோ
சுற்றியதோர் விசை நரம்பில் வேவுகொண்டு
காலையுமே யூடுருவித தமரு விம்மிக்
களிப்பது போல் மாசுபற்றி ரத்தஞ்செத்து
மாலையது போற்றெடுத்து நரம்பின் மீதே
வகையான விசை நரம்பை மடக்கிகக் கொள்ளும்
கோலை விட்ட குருடரைப் போல் திடமிழந்து
குடி கெடுக்குஞ் சூலையது குறிகண்டீரே"

- குறுநாடி நூல்

Increased vaayu (one of the panchapootha elements in spinal nerves affects the functional humour of vatha, as a result blood detoriation and vascular changes occur. Ultimately further affection of spinal nervous function takes place.

"திருத்தமாம் வாதத்தோடே தீங்கொடு பித்தம் சேரில்
பொருத்துகள் தோறும் நொந்து போகவேயிடிக்கும் சூலை"

- குணவாகடம் நோயின் சாரம்

When pitha dhosha associated with Vatha, joint pain and soolai noi will arise.

Classification of santhuvatha diseases:

There are 80 types of vatha diseases are explained in **Yugimuni Vaidhya Chindhamani**, among them, **11 types** of vatha diseases are associated with **Poly arthritis**.

They are

- Santhuvatham
- Vatha suronitham
- Kalanjaga Vatham
- Uthira Vatha Suronitham
- Narithalai Vatham
- Malaitha Kambha Vatham
- Vatha Upakatham
- Kumba Vatham
- Thandaga Vatham
- Sagana Vatham

In **Agasthiyar Vaidya Kaviyam** 5 types.

- Vatha Soolai
- Vatha Azhal Soolai
- Marbil Soolai
- Azhal Soolai
- Amavatha Soolai

In **Jeva Rackchamirtham** 7 varieties are explained as vatha, pitha, kapha & Mukkuttra Soolai, Ama Soolai, Sankara Soolai, Gunma Soolai.

There are additional 2 types in **Anubava Vaidya Devaragasiam**

They are Mega Soolai and Muri Soolai

In **Athmarakshamirtha Vaidya Sara Sangiraham**,

The joint diseases are classified into 25 varieties. In **Thirumoolar Karukkidai Vaidyam – 600** 5 types

- Vatha Soolai
- Pitha Soolai
- Kapha Soolai
- Vatha Pitha Soolai
- Seezhmega vayu Soolai

In Agasthiyar Gunavakadam

- Vatha Soolai
- Vatha Azhal Soolai
- Azhal Soolai
- Iya Azhal Soolai
- Seezhmega Soolai

Thus many litratures mentioned joint disorders under the name of Soolai. In the text book of Siddha Maruthuvam, synonym of Santhuvatham is denoted as Keel vayu accordingly santhuvatham can be classified as follows.

Valikeel Vayu:

"வலிக்குத்தல் வீக்கங் காணும் வாய் தொண்டை வரட்சிகாய்ச்சல்
தலைவலி மார்து டிப்புத் தாங்கொணா வலிவீக் கந்தான்
நிலவுகாற் கணுக்கு றங்கு நீகுதோள் முழங்கைக் காற்காம்
மலக்குடற் கட்டு வேர்வை வாதத்தில் வாய்வி தாமே"

- சபாபதி கையேடு

It is characterised by gnawing pain and swelling of joints, dryness of mouth and throat, fever, headache, palpitation of the heart, intolerable pain of the major joints like knee, ankle, hip, wrist, elbow and shoulder joints associated with constipation and excessive sweating.

Azhal Keel Vayu:

"பித்தக்கீல் வாய்வு தன்னாற் பிறங்குகீல் முட்டு வீங்கிச்
சித்தர்செய் மருத்துவத்துஞ் சீர்படாத் தன்மைத் தாகித்
தக்கற காய்ச்சல் கண்டு சாலவே தனைதான் தந்தே
மெத்தறு சிகிச்சை தன்னால் மென்மெல நீங்குமப்பா"

- சபாபதி கையேடு

As pitha increases, kapha in the joint decrease and hence dryness occur. So during flexion of the joint crepitation sound "Kaluk Kaluk" is produced. In advanced cases it produces ankylosis of the joints and hence restriction of the joint movements results.

Iya Keel Vayu:

"கருதருங் கபக்கீல்வாயு கண்டிடின் உடலிளைக்கும்
உருமெலி வாக்குங் கொள்ளும் உண்டியைச் சுருக்கும் இன்பந்
தருதுயில் நீங்கு முட்டிற் றாங்கொணா வலவையாக்கும்
இருமலே விக்கல் வாந்தி சோபை பாண்டெழுப்பும் பாரே"

- சபாபதி கையேடு

It is characterized by severe pain in the joints associated with emaciation of the body, anorexia, insomnia, cough, hic-cough, vomiting, anaemia and dropsy.

Vali Azhal Keel Vayu:

"வாதபித்தக் கீல்வாயின் வருங்குறி சாற்றக் கேளாய்
ஏதமார் மந்த மேப்பம் இரைச்சலும் வயிற்றிற் காணும்
ஓதருங் குத்தல் வீக்கம் ஒய்தலின் எரிச்சலுண்டாம்
கூதறும் முறக்கமின்மை காய்ச்சலும் காணுங்கண்டாய்"

- சபாபதி கையேடு

Vali Azhal Keel Vayu has the Symptoms of indigestion like mantham, yeppam (Eructation), iraichal (Gurgling noise of the abdomen-borborygmi).

This disease occurs due to excessive intake of certain foods, which increase vatha and Pitha. (Eg. Mutton, egg, fish and potato). In the disease eructation occurs due to indigestion. Then gas form in the abdomen and constipation developed.

Vali Iya Keel Vayu:

"வயங்வா தக்க பக்கீல் வாயுவான் வலிமி குந்தே
உயங்குநீர் கோத்துக் கீல்கள் ஓரியின் தலைபோற்காணும்
நயங்கொள முடக்கல் நீட்டல் நண்ணிடா மெய்யுங்காயும்
மயங்குறு முறக்க மின்னாம் மன்னிய நெரிக்கட்டாமே"

"உடலது வெதும்பிக் கையால் உடலது கடுத்து நொந்து
கடலுதரங் கால்கரங்கள் கனத்தாற்போ லுயர்ந்துகாணும்
சடமது விழுந்த தாகுஞ் சலங்கெட்டு தோடமுண்டாம்
முடமதாங் கைகால் தானு முயங்கின வாதமாமே"

- சபாபதி கையேடு

It is characterized by pain in the joints associated with effusion of joint fluid and swelling, restricted joint movements, pyrexia, fainting, insomnia, lymphadenopathy, generalized malaise, atrophy of the affected limb etc. The affected joint looks like "Fox's head".

Azhal Vali Keel Vayu:

"வெயிலைடைத் திரிதல் பித்த மிகுமுண வருந்தலுள்ளம்
பயிலுறு கவலையாதிப் பண்பினால் பித்தவாதம்
கயிலுறு வாய்வு தோன்றிக் கைப்புடன் மயக்கம் வாந்தி
இயலுறு பல்லிற் செந்நீர் இறங்காறால் நோக்கங் கொள்ளும்"

- சபாபதி கையேடு

It is characterized by pain and swelling of the joint associated with bitter taste, vomiting, fainting, bleeding from the gums, malena, haematemesis. The common site is ankle joint. Pain, swelling, redness may also present.

Azhal Iya Keel Vayu:

"மிதமிலாக் கல்வி யையை மிகுவிக்கு முன்டி பித்தக்
காமுறு செயவி வற்றிற் காண் பித்தக் கபக்கீல்வாயு
இதமுறு மயக்கம் வாந்தி எரிசுரந் தலைநோய் வீக்கம்
மதகரி நனயின் மார்பு துடிப்புடன் எரிவும் செய்யும்"

- சபாபதி கையேடு

It is characterised by pain and swelling of the joints associated with fainting, vomiting, hyperpyrexia, headache and palpitation. Common sites are elbow and knee joints.

Iya Vali Keel Vayu:

"நரித்தலை வாத நரம்புகள் வாயு கோபித் தொன்றாய்
அரிந்திடுந் தலைமேல் கைகால் அங்கமொடு உளைந்து வெதும்பி
முரித்தது இறங்கி வந்து முழங்கால் கைகால்கடுக்கும்
நுரித்தலை வாதமென்று நவின்றனர் முனிவர் தாமே"

- சபாபதி கையேடு

This clinical entity mainly involves the knee joints with accumulation of blood in the joint, which result in immobilization of the joint with stiffness of periarticular structures. So the swelling resembles the fox head and palpitation may occur.

Iya Pitha Keel Vayu:

"ஐயினைப் பெருக்கு முண்டி யயிலலாற் குளிருங் காற்றால்
மெய்யுறு கோழை மிக்கு மிகுவலி தொண்டை கட்டல்
ஐயுறு காய்ச்சல் வாந்தி அயர்வுடன் இருமல் வீக்கம்
செய்யுங்கீல் மடக்கல் நீட்டல் செய்திடாத் துயருண்டாமே"

- சபாபதி கையேடு

It is characterised by excruciating pain in the joints associated with increased sputum, laryngitis, pyrexia, vomiting, drowsiness, cough, oedema and restricted joint movements etc.

Mukkutra Keel Vayu:

"மிக்குற வியர்த்தல் மூச்சு மேலிடல் தலை கிறுத்தல்
மக்குறு மயக்கந் தோன்றல் வாந்தியே வாய்பி தற்றல்
பொக்குறு மலநீர் கட்டல் பொருமிய வீக்கங் காணல்
முக்குற்றக் கீலின் வாயு முகிழ்த்திடுங் குறிகளாமே"

- சபாபதி கையேடு

It is a chronic one, characterised by pain & swelling of the joints which increases day by day, suppuration of the surrounding structures, associated with excessive sweating, dyspnoea, giddiness, syncope, vomiting, delirium, constipation, anuria, oedema etc. It this is not treated properly it may leads to fatal termination.

Complications of Santhuvatham:

As the disease progresses, joint diseases leads to deformity and immobilization of the limbs. In Siddha system such conditions are named as mudakku Vatham.

"பத்திய வாதந்துயத்து பாகுமே பயித்தியத்தால்
எத்திய நரம்பிமுத்து மேலதுஞ் சுருண்டு கொள்ளும்
குத்தியே துளைத்தாற் போல குடைந்து காலடைந்துகாணு
மற்றிது முடக்கு வாதமா மெனக் கருதலாமே"

- யூகி முனிவர் பெருநூல் வைத்திய காவியம் -1000

It denotes, in Mudakkuvatha condition body will bend forward and rounding the shoulder probably due to vertebral column deformity (Hang dog position).

"முட்டது கடுகடுத்து முறித்துடன் தறிநாப்போல்
கட்டுற நடக் கொண்ணாது கவிழ்ந்தது கவிழ்ந்தாப்போலே
மிட்டவே வெறுத்து நேர்வாயுதின் குணங் கண்டதாகில்
தொட்டுற முடக்குவாத குணமெனச் செப்பலாமே"

- யூகி முனிவர் பெருநூல் வைத்திய காவியம் -1000

Same book says due to Mudakkuvatha affliction one cannot straighten his body after bending and also inability to walk with joint pain.

In **Chikitcharathna Theepam** hand involvement also stated, where there is disability of hand, fever & swelling are described as Kaimudakku Vatham.

"கரமதுதனை முடக்கி விழுந்திடும் காயும்பின்னர்
உரனுறவுளைந்துக் குத்தி வீக்கமுண்டாமீது
விரவு கைமுடக்குவாத குணமென விளம்பிவைத்தார்"

Piniyari Muraimai:

Diagnostic methods adopted in siddha system of medicine are formed as “Piniyari Muraimai”. It is based on the following principles,

- Poriyal arithal
- Pulanal arithal
- Vinathal

Pori and pulan are the five organs of perceptions and their senses respectively. Nose-Smell, Tongue-taste, Eyes-Vision, Ears & Skin-Auditory & touch. Porigal of patient and Doctor are used by the physician as instruments.

Vinathal is a method of enquiring about the details of patient’s complaints from his own words or from their attendant.

The above mentioned principles can be compared to that of interrogation and inspection, percussion & palpation, auscultation.

The important method adopted to diagnose the disease is by means of **“Envagai Thervugal”**.

ENVAGAI THERVUGAL INCLUDES :

Naadi, Sparisam, Naa, Niram, Mozhi, Vizhi, Malam, Moothiram.

The fact regarding envagai thervugal suggests that it is mostly used method of diagnostic standard in siddha system and more concentration should be given to get proficient knowledge.

“நாடிப்பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்”

- நோய்நாடல் நோய் முதனாடல் பாகம் I

It is considered to be physician instruments and this can be understand by following stanza,

“தொடுக்கலுற்றறு அட்டவிதப் பரீட்சை தன்னை
துலக்கமுறும் பண்டிதரே தெளி வதாகப்
பகுக்காய நாடியை நீ பிடித்துப் பாரு
பகர்கின்ற வார்த்தை பார் நாவைப் பாரு

வகுக்கரிய தேகமென்றத் தொட்டுப் பாரு
வளமான சரீரத்தின் நிறத்தைப் பாரு
சகிக்கரிய மலத்தைப் பார் சலத்தைப் பாரு
சார்ந்த விழிதனைப் பார்த்து தெளிவாய் காணே"

- அகத்தியர் வைத்திய வல்லாதி 600.

Naadi – (Pulse) :

"அறிந்து பார் வாதமே தனித்த தானால்
அன்னம் போல் நடக்குமப்பா நாடி பாரு
சரிந்திடவே கால் முடக்கும் போது காட்டும்"

- அகத்தியர் ரத்தின சுருக்கம்

Vitiated vatha causes difficulty in walking or impaired function of lower extremities. The examination of naadi has been recognised as one of the principle means of diagnosis and prognosis of disease from times immemorial.

Sparisam (Skin):

Skin examination can be made out by touch and reveals about warmness / chillness / dry / weeping skin / rough / smooth / soft / hard, tenderness or presence of ulcers, swelling, wrinkles, hair, pigmentation etc.,

Naa – Tongue:

The colour, character and condition of the tongue changes according to the changes in mukkutram.

Niram (Colour):

As vaatha is the root cause the colour of the patient's skin, tooth, etc., should be dark or black in colour.

Mozhi (Speech):

Speech in vatha patients may vary according to the deranged Dhosas and grade of the disease.

Vizhi (Eye):

In the diseased condition both motor and sensory disturbances of the eye can be expected. Burning of the eyes, lacrimation, irritation, colour changes are also noticed under this group.

Malam (Stools):

In vatha diseases stools should look in colour with constipation.

Moothiram (Urine):

"உறைந்த நீருங் கரு கருத்து
முறையாய் ரோகமு முண்டாமே"

- அகத்தியர் நாடி

Its examination regarding

Neerkuri:

- Niram – Colour of the urine.
- Manam – Smell of the urine.
- Edai – Specific gravity of the urine.
- Nurai – Frothy nature of the urine voided.
- Enjal – Indicates the quantity of the urine voided.

Neikuri:

"அருந்து மாறிரதமும் அவிரோதமதாய்
அ.ˆகல் அலர்தல் அகாலவூண் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருபித்தல் கடனே"

- தேரையர்

Method:

Prior to the day of urine examination the patient is advised to take balanced diet and the quantity of food must be proportionate to his appetite and he should have a good sleep. After waking up in the morning, urine voided first, was collected in a glass container and was subjected to analysis with in 1½ hours. A drop of gingelly oil is dropped without shake, the nature of the Neikuri should be noticed in direct sunlight.

Character of different neer:

"அரவென நீண்டிடின.்தே வாதம்"

When the oil drop spreads like a snake, it indicates vathaneer,

"ஆழி போற்பரவின் அ.்தே பித்தம்"

If the oil drop spreads like a ring, it indicates pitha neer.

"முத்தொத்து நின்றின் மொழிவதென்கபமே"

If the oil drop remains as that of pearl, it indicates Kapha Neer.

MUKKUTTRA NILAIGAL

Vatham is the prime force that impacts movement to every living cell in the body. Its dwelling place lies in the bones, muscles, nerves, joints etc. Hence it is responsible for the movement of parts involved in locomotor system. When this Uyir Thathu, Vatham is affected the other two, Pitham and Kabham gets dearranged and in turn, they vitiate the other structural and functional elements of living body called Seven Udal Thathus.

1. **Viyaanan** which is responsible for the voluntary and involuntary movements and nutrition of the tissue gets affected leading to restriction of movements and lassitude.
2. **Samaanan** which neutralizes other vitiated vayus gets affected.Further it is needed for normal digestion.So dearrangement of this vayu produces loss of appetite and indigestion.
3. Involvement of **Abaana Vayu** also plays a main role in the manifestation of signs and symptoms. Abaanan which is responsible for distribution and assimilation of nutritional factors gets affected leading to symptoms like constipation.

The main function of Pitham which represents Agni is Thermogenesis or heat production, metabolism within its limits, process of digestion etc. Its

vitiation produces inflammatory changes in joints. Among the five types of Pitham, the following four types in gets affected Santhu Vatham.

1. **Ranjaga Pitham** which gives colour to blood.
2. **Saathaga Pitham** which is needed to carry out normal activities gets affected.
3. In few, **Anal Pitham** which is needed for digestion and
4. **Prasaga Pitham** which gives complexion to skin gets affected leading to anorexia and pallor of skin respectively.

The detoriation of the two main kuttram also accompany the Kabha kutram whose structure is **Earth + Water** and is concerned with the maintenance of Smooth working of joints, Integration of structural elements of the body into stable structures etc. Hence detoriation of kabham which is of five types affects the following.

1. **Santhiga Kabham** which is needed for normal maintenance of synovial fluid gets affected.
2. **Avalambagam** which forms the basis for all other four types of Kabham gets affected.
3. In few, **Kilethagam** gets affected leading to loss of appetite.

Thus disturbance in Mukkutram produces,

- Pain, swelling of joints, joint stiffness, restriction of movements due to **Vatham.**
- Inflammatory changes in joints like redness, warmth due to **Pitham.**
- Erosion of bony margin, osteoporotic changes, increase in the Synovial fluid are due to disturbed **Kabham.**

Disturbances in Vatham, Pitham and Kabham gets reflected on Udal Thathus leading to change in normalcy of body either conferring a pre disposition to or actually causing disease. The Seven Udal Thathus that supports the body in their state of equilibrium are as follows.

1. Saaram	-	Strengthens the body and mind.
2. Senneer	-	Gives power, knowledge and boldness to the mankind.
3. Oon	-	It gives structure and shape to the body and is responsible for movements of the body.
4. Kozhuppu	-	It lubricates the joints and organs and facilitates their functions.
5. Enbu	-	It protects all the internal organs and forms structural framework of the body.
6. Moolai	-	Resides inside the core of bones. It strengthens and maintains the normal condition of bones.
7. Sukkilam/ Suronitham	-	Meant for reproduction (Male and Female respectively).

Another principle in siddha medicine, the man is composed of 5 elements like universe.

"அண்டத்தி லுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்
அண்டமும் பிண்டமும் மொன்றே
அறிந்துதான் பார்க்கும் போதே"

- சட்டமுனி ஞானம்

Time, place, nature of body (pirakiruthi) and environmental change have interrelations among them.

So besides envagai thervugal, paruva kalangal and Thinai also should be taken in consideration to arrive the perfect and correct diagnosis.

Thinai (Land and Place):

The geographical distribution of the land is classified into five regions.

- Kurinji - Mountain and its surroundings
- Mullai - Forest and its surroundings
- Marutham - Field and its surroundings
- Neithal - Sea and its surroundings
- Paalai - Desert and its surroundings

Each region has its own characters, which influences the inhabitants, physical, mental, economic, occupational and cultural activities. In each region some ailments are endemic based on the climatic conditions. Accordingly, vatha diseases are common in neithal nilam. Palai nilam – common places for all types of diseases. Marutha nilam – is good for all types of treatment and health.

Neithal Nilam:

"நெய்தனில மேலுப்பை நீங்கா துறினுமது
வெய்தனில மேதங்கு வீடாகும் - நெய்தல்"

- பதார்த்த குண சிந்தாமணி

Paalai Nilam:

"பாலை நிலம் முப்பிணிக்கும் மில்லம்"

- பதார்த்த குண சிந்தாமணி

Marutha Nilam:

"மருதநிலம் நன்னீர் வளமொன்றைக் கொண்டே
பொருதனில மாதியநோய் போக்கும் - கருதநிலத்……

- பதார்த்த குண சிந்தாமணி

Kalam:

Generally speaking medicine was formed upon the particular country's individual and special aspect, in the same way siddha medicine is based on southern peninsula's (the cradle of human race), civilization, culture and climatic changes. According to siddha system the year is divided into six seasons with reference to the position of earth and sun.

- Kaarkalam - August, September
- Koothirkalam - October, November
- Munpanikalam - December, January
- Pinpanikalam - February, March
- Ilavenilkalam - April, May
- Muduvenilkalam - June, July

In every season, changes will occur in the land, water, plants, animals and human beings, which will change human body, vital humour and affect udalthathukkal and make them susceptible to certain specific diseases likely to occur in that season.

Kaarkalam:

"வெளிச் சுழல் தட்பத்தை விஞ்முட் சூட்டை
அளித்துரிக்கு நேர்செயுமால் யாக்கைக் - களி செரி
வன்னிய.ங்கும் காணத்தால் வாதாதி முத்தோடம்
நன்னிலையில் நில்லா நவில்"

- மருத்துவ தனிப்பாடல்

These above mentioned poems stated that the kaar and koothir kalam are seasons for vatha diseases.

Udalvanmai:

It means strength and vitality of the body. It is classified into three types.

- Eyarkai vanmai - Inherited immunity
- Kaala vanmai - Age, season and time
- Seyarkai vanmai - Improvement of 3 vitality obtained by diet, day-to-day habits and physical exercises.

Prognosis :

Through a full of knowledge about prognosis will save the patient as well as the physician from considerable difficulties. The knowledge of prognosis is most important for a physician to have a perfect and proper line of treatment and prevention.

In santhu vatham the course of the disease is depend on the pirakiruthi, disturbed vatha, pitha, kapha and kaalavanmai, seyarkai vanmai and stages of the disease. Prognosis mainly depends up on the affected thridoshas. Commonly, it is difficult to yield permanent cure, in later stage of the disease produce ankylosis. Gradually all movements of the joints becomes restricted.

In **Agasthiyar Gunavagada Thirattu**,

"ஆகாத வாதமும் பித்தமும் சூலையாம்
வாகான கைகால் வளமாய்க் கரடேறவும்
தாகான மேனிதனில் வெடிப்பும் புண்ணாகும்
போகாமனின்று புணர்ச்சியால் கொல்லுமே".

It denotes a complicated course of the disease, which is hardly curable.

In advanced stage it produces ankylosis of the joints, in upper and lower limbs, and it results in restriction of movements.

NOI NEEKAM / PARIKARAM

Treatment of Santhvatham

In siddha system of medicine the main aim of the treatment is removel of Udalpinigal (due to alterations of Uyir thadukkal and Udal thadhukkal) and Ulappinigal (Due to alteration of mind).Ayyan Thiruvalluvar says about physicians duty as “study the disease, spy the cause. Seek subsiding ways and do what is proper and effective” the man well versed in medical lore would measure the patients, disease time before the healing work begins.

“நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய் நாடி வாய்ப்பச் செயல்

- திருக்குறள்

“உற்றான் அளவும் பிணியளவுங் காலமுங்
கற்றான் கருதிச் செயல்”

-திருக்குறள்

So its essential to know the disease the cause, the nature of the patient, severity of illness, the seasons and time of occurrence must be observed clearly.

So it clarifies the treatment as follows,

- Kaappu (Prevention)
- Neekam (Treatment)
- Niraivu (Restoration)

Kaappu :

It means prevention of human beings from disease. As per siddha system the vinaipayan (Kanmam) is transferred to the fertilized embryos at the time of conception. This vinai payan produces certain incurable chronic disease according to siddhars. More over one should try to neutralize the vinai payan before his life time because, his negative effects are transferred to his hereditary.

One should simply eliminate the vinai payan through some simple life style modification or regulations. Further the physician must advise all the patient to follow the following habits.

- Living with good moral habits.
- Diet must be easily digestable and pure vegetarian diet is advisable
- Diet containing high fibre content so as to prevent constipation is advised. It should be fat free and also free from spices.
- Add food stuffs which neutralise vatham.
- Avoid emotional stress, fear and anxiety
- Avoid exposing chill weather and rain.
- Take oil bath regularly
- Avoid in-take of Alcohols and smoking.
- Avoid excessive work load.
- Always do some simple yogas & meditation

Neekam:

A good physician should know the deranged kutram and should treat the patients according to the vitiated kutram. So the treatment is based on

(i) To bring down the thridosham normal

(ii) To give internal as well as external medicines, according to the symptoms of the diseases.

For Normalizing Thrithodam:

"விரேசனத்தால் வாதம் தாழும்"

From the above poem, siddhar's had advised to prescribe purgatives (or) laxatives to bring back normal vatham.

In santhu vatham 10gms of Nilavagai chooranam with luke warm water was administered at bedtime, before starting the specific treatment.

"ஒதுகின்ற மலக்கட்டை யொழிய வைத்தால்
உடலிலுள்ள வாதையெலா மொடுங்கிப் போகும்"

Administration of Medicines:

Perhaps there are varieties of medicines available in various siddha literatures but the author had selected the following medicines as test medicines.

Internal Medicine:

Medicine : **Meganathi Kulligai**

Dose : 1-2 tablet, three times a day

Adjuvant : honey

External Medicine:

Medicine : **Arrkkathy thylam**

Massage Therapy or Thokkanam:

"தொக்கணத்தின் விரத்தந் தோல் ஊணிவைகளுக்கு
மிக்க சவுக்கியஞ் சமீரனும்போ மெய்க்கதிகப்
புட்டியுறக்கம் புணர்ச்சியிவை கதிக்கும்
பட்ட அலைச்சலுறும் பார்"

- தேரன் தருபாடல்

Chronic diseases like (Hemiplegia, Paraplegia) Pakkavatham, Arunavatham, Santhuvatham (Arthritis), Sirakampa vatham (Cerebral palsy), Mugavatham, (Facial paralysis) etc take too long period to cure.

Thokkanam is very useful in muscular, bony or nervous disorder, for such diseases Thokkanam can be done after applying medicated oil or without application of oil.

There are 9 methods in Thokkanam. They are,

- Thattal
- Irukkal
- Aluthuthal
- Kaikattal
- Izhuthal
- Pidithal
- Murukkal
- Mallathuthal
- Asaithal

Among the 9 types of Thokkanam, the following 2 types of Thokkanam (Massage) are mainly employed.

- Pidithal (effleurage and petrissage)
- Aluthuthal (Friction)

Pidithal is a process in which strokes are slided smoothly and by kneading.

Aluthuthal is a process in which friction or compression is performed.

Massage Therapy:

Definition

Massage is the scientific manipulation of the soft tissues of the body. It is done by the palmar surface of the hands and fingers to produce effect on skin, muscles, nerves, blood, lymph nodes and joints.

General effects of massage:

1. Relaxation
2. Increased Circulation
3. Reduction of Spasm
4. Reduction of Oedema
5. Stimulation of sensory and motor nerves
6. Breakdown of excess fat
7. Relief of pain and tension
8. Reduction of lymphatics
9. Increased glandular activity
10. Stimulation of sweat glands.

Local effect of massage

a. Local erythema and vasodilatation
b. Facilitating nutrient to the muscle
c. Nourishment to the periostium
d. Increased mobility
e. Breakdown of adhesions

f. Absorption of the skin's waste products.

g. Loosens or stretches the soft tissues.

YOGA:

Yogasanas are specialized postures of the body and helps in the development of an inner awareness and results in deep relaxion and energy conservation. Prescription of these asanas which is synchronized with breathing helps in the correction of impairment there by improving the musculo-skeletal function and maintaining the state of well being.

Santhu Vatham patients were adviced to perform

- **Savasanam**

When the acute symptoms subsides the following Aasanas are advised to protect the diseased joints against further damaging, stress and in preserving joint motion and preventing joint stiffness and deformity.

- Sukhasana (Comfortable posture)
- Padmasana (Lotus posture)
- Ardha Padmasana (Half lotus posture)
- Utkatasana (Half squat posture)
- Vrikshasana (Tree posture)
- Bhadrasana (Beneficial posture)
- Vajrasana (Adamant posture)
- Makarasana (Crocodile posture)

Practice of this pranayama relieves stress, tension, anxiety and insomnia there by bringing stability to mind. The Mudras preserves the joint movements of fingers.

Pathiyam – Diet and Regimen:

"பத்தியத்தினாலே பலலுண்ணடாகும் மருந்து
பத்தியங்கள் போனால் பலன்போகும் - பத்தியத்தில்
பத்தியமே வெற்றி தரும் பண்டிதருக் காதலினாற்
பத்தியமே உத்தியென்று பார்"

- தேரையர் யமக வெண்பா

During the course of treatment according to the drug administered to the patient, and nature of the disease, the patient is advised to follow certain precautions regarding diet and physical activities. This form of medical advise in siddha system of medicine is said to be as pathiyam.

Pathiyam for vatha diseases mentioned in **Pathartha Guna Chinthamani** is as follows.

சேர்க்கத்தக்கவைகள்:

"செங்கழு நீர் கோடைந் தேன்மிளகு நல்லெண்ணெய்
தங்கு பெருங் காயந் தழுதாழை - ஓங்கெங்கும்
கூட்டு சிறுமுத்து நெய் கோதில் உழுந்திவைகள்
வாட்டு மனிலத்தை யறி"

செங்கழுநீர் கிழங்கு கோஷ்டம், குறிஞ்சித்தேன், மிளகு, எள்நெய், பெருங்காயம், தழுதாழைஇலை சிற்றாமணக்குநெய், உளுந்து. மேலும் இருமுறை வடித்தகஞ்சி, கத்திரிபிஞ்சு, அவரைபிஞ்சு, அத்தி பிஞ்சு, வெள்ளாட்டு கறி, காடை, கவுதாரி, உடும்பு, முடக்கறுத்தான், அறுகீரை, பொண்னாங்கன்னி, தூதுவேளை,வேளைக்கீரை, மூக்கிரட்டை, பருப்பு வகைகளில் துவரை நல்லது.

நீக்க வேண்டியவைகள்:

"கடுகு நற்றிலத் தெண்ணெய் கூழ்ப் பாண்டங்கள் கடலை
வடுவதாகிய தெங்குமா வருக்கை நற்காயம்
மடிவிலாத வெள்ளுள்ளி கொள் புகையிலை மதுபெண்
இடது பாகலோடகத்தி நீக்கி விச்சா பத்தியமே"

- சித்த மருத்துவாங்கச் சுருக்கம்

மேலும் புளிப்பு, துவர்ப்பு சுவையுள்ள உணவு வகைகள் சுரை, பூசனை, வெள்ளரி, புடலை, பீர்க்கு முதலிய நீர் கூடிய காய்கறி வகைகளையும், மொச்சை, காராமணி, கொள்ளு, கடுகு, தேங்காய், கிழங்கு வகைகள், மந்தமுள்ள பதார்த்த வகைகள் முதலியவைகளை நீக்க வேண்டும்.

1. NIRAIVU (Life style modification):

Self help techniques were advised to keep inflammatory process at a minimum, there by preserving joint motion.

SELF MANAGEMENT TECHNIQUES:

- Rest - reduces the general activities there by avoiding straining of joints and to conserve the quota of vitality.
- Positive mental attitude.
- Use of joint – Patient is told, the value of correct posture and methods of using the joints wisely to reduce stress on the painful joints.
- Assistive devices – Like splints, walking sticks provides strength and reduces pain and inflammation.
- Adequate sleep.
- Relaxation techniques.
- Modification in daily activities like avoiding walking on hard and uneven surfaces, avoiding squatting on ground, etc.

MODERN ASPECT

Joint:

The place of union or junction between two or more bones of the skeleton especially a junction that admits more or less motion of one or more bones is termed as a joint.

Classification:

- ❖ Immovable - Skull type of joints.
- ❖ Slightly movable – Vertebral type of joints
- ❖ Highly movable – limb type of joints

Immovable Joint:

They are classified according to the type of tissue found between the articulating bones.

- ❖ Sutures – Found between membrane bones.
- ❖ Synchondrosis – Found between cartilageous bones.

Sutures:

In between two bones there is a membrane. The membrane persists even in adult life.

(Eg) coronal suture, sagital suture etc.

Synchondrosis :

A layer of cartilage is found in between the articulation bones. These bones are embryologically developed as cartilageneous bones.

(Eg) : Spheno occipital synchondrosis,
Spheno ethmoidal synchondrosis.

Synostosis:

Suture or synchondrosis ossify the joint disappears.

Slightly Movable Joints:

Vertebral type of joints (Amphiarthrosis). They are the cartilagenous joints. They are slightly movable joints.

They are classified into the following types

- ❖ Primary Cartilagenous Joint.
- ❖ Secondary Cartilagenous joint.

Primary Cartilagenous Joints:

They are temporary cartilagenous joints. The cartilage disappears after some years of life. So they are temporary cartilagenous joints. (eg) joints found between the diaphysis and epiphysis of the long bones.

Secondary Cartilagenous Joints:

They are classified into following types.

- Symphysis
- Syndesmosis

A symphysis is a joint, where the articular surfaces are covered by hyaline cartilage. Ligaments unite the bones. Joint cavity is actually absent.

(Eg)

- Pubic symphysis
- Joints between bodies of vertebrae
- Manubrio sternal joint etc.
- The symphysis type of joints are found along the midline.

Syndesmosis:

The articulating bones are kept at a distance but united by strong ligaments.

(Eg)
- Inferior tibio fibular syndesmosis
- Joint between coracoid process and clavicle
- Joint between vertebral arches.

So a typical vertebra takes part in three types of joints.

- Symphysis
- Syndesmosis
- Synovial joints

Synovial Joints (Limb type of joints) (Highly movable joint):

They are highly movable joints. The articulating surfaces are covered by the articular hyaline cartilage. The bones are held together by a fibrous capsule. This casule is thickened to form collateral ligaments. The inner surface of the capsule is lined by a silky synovial membrane. The synovial

membrane lines the capsule is reflected to the borders of the articular cartilage. The synovial membrane does not line the articulating surfaces. The cavity of the joint is filled with the synovial fluid. This fluid is a dialystate of plasma and it contains hyaluronic acid.

Fatty pads are present in some synovial joints. These fatty depots are situated between the synovial membrane and capsule or between the capsule and bone. (Eg) knee joint.

Ligaments:

In the large joints, they are formed from the capsule as a specialized part of the capsule.

(Eg) Ligaments of the knee joint

Here the ligaments are formed of non-elastic collagenous tissue. Some ligaments are made up of elastic tissue.

(Eg) Spring ligaments in the foot.

Bursae :

This is a sac of synovial membrane surrounded by fibrous tissue. They facilitate movements. They may be continuous with the joint cavity.

(Eg) Supra Patellar bursa of knee joint.

Articular disc:

In some joints there may be fibro cartilagenous pads. They divide the joint cavity into two components.

(Eg)

- ❖ Sterno clavicular joint
- ❖ Temporo Mandibular joint
- ❖ Knee joint

Synovial Membrane:

Synovial membrane lines non-articular areas in synovial joints, bursae and tendon sheaths, all regions where movement occurs between opposed surfaces, which are lubricated by a fluid superficially like egg albumin

(synovia) secreted and absorbed by the membrane. It lines fibrous capsules and covers exposed osseous surfaces, intra capsular ligaments and tendons.

Synovial Fluid:

Synovial fluid is a clear, viscous, pale, yellow fluid, with a specific gravity of 1008 to 1015, which fills the synovial cavity. It is a dialysate of the blood plasma with mucin and hyaluronic acid added to it as secretions from the synovial cells.

Functions:

The main functions of the synovial fluid are lubrication and nourishment of the articular cartilage.

Synovial Fluid includes provision of a liquid environment, small in range of pH, for joint surface nutrition of articular cartilages, disc and menisci lubrication and reduction of erosion.

Synovial membrane not only produces fluid but also removes materials from the articular cavities.

The Synovial Cavities

The joint cavities and the bursae are known as synovial cavities. The synovial membrane at all, but only a collection of dense fibrous tissue cells that lines the surface between the interstitial spaces and cavities. For this reason these cavities might be considered to be nothing more than enlarged tissue spaces. However the synovial cavities do contain large amounts of muco poly saccharides much than normally present in the interstitial fluid. The origin is not known, though presumably it is secreted by the surrounding connective tissue cells.

In the synovial cavities, excess proteins are likely to collect in the potential spaces and these must be returned to the circulatory system through the lymphatics, otherwise the space swells. Since the synovial membrane offers little or no barrier to the transfer of fluid into the surrounding tissues, the protein can flow into the lymphatics of the area.

Nerve supply:

Hiltants Law:

Nerve supply to a joint is derived from the nerve supply of muscles acting on that joint and some nerve will supply the skin over the joint.

Blood supply:

Blood vessels are absent in the articular cartilage, blood vessels of the most limbs type of joint are derived from the anastomosis around that joint. The synovial membrane is highly vascular.

Neuro Vasclular Relation:

Vessels and nerves are situated usually along the flexor surface of a joint. (eg) knee joint.

In the case of hip joint, vessels and nerves are toward along the flexor and extensor surfaces.

Lymphatic Drainage:

A joint is drained by lymph vessels to the nearest lymph node. The synovial membrane is highly lymphatic where as the articular cartilage is non lymphatic.

Classification of Synovial Joints:

- Plane Joints
- Uniaxial Joints
- Hinge Joints
- Pivot Joints
- Biaxial Joints
  - Condyloid Joint
  - Elipsoid joint
- Multi Axial Joints
  - Ball and socket joint
  - Saddle joint

Disease of Joints:

The most common cause of arthritis in India is due to the prevailing infections of various types.

Classification:

Joints are subject to various types of disease and disorders. Although the etiology of many of these has been recently understood, there are still many conditions where the exact etiology is not yet clear. Many lesions which are not strictly inflammatory are still loosely termed as arthritis.

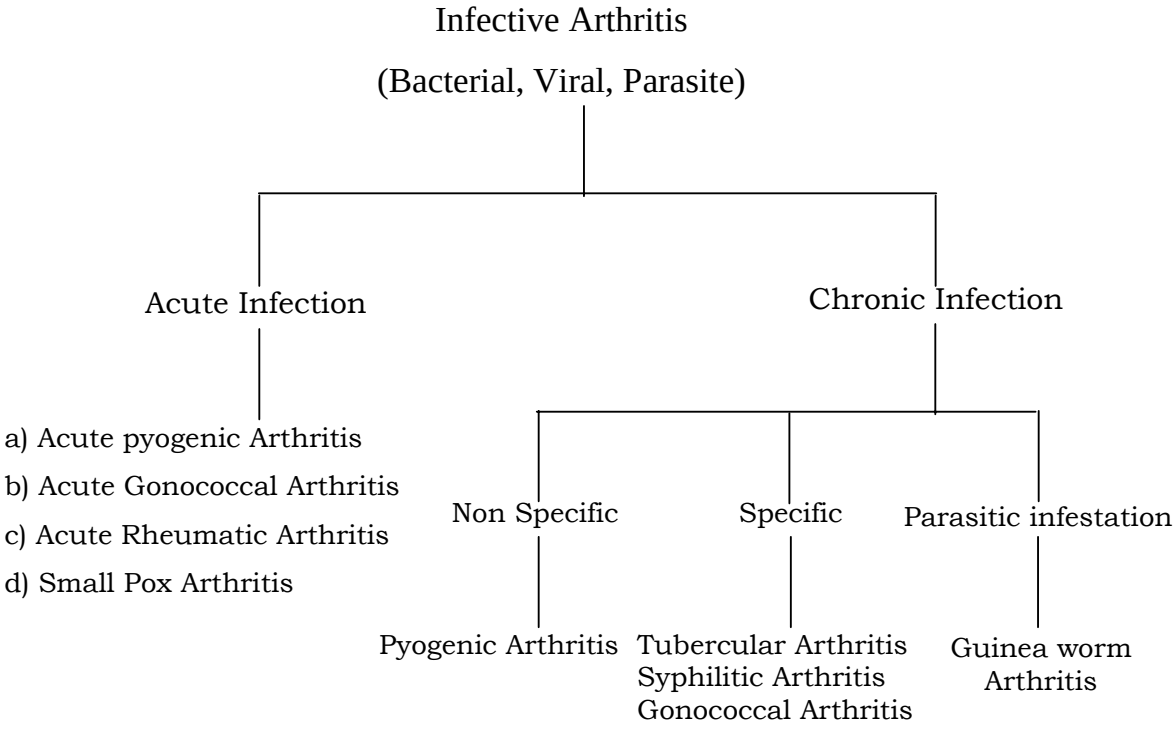
Rheumatism is an indefinite term applied to various conditions with pain or other symptoms which are of articular origin or related to other elements of the musculo skeletal system.

The word "Rheumatoid" is derived from Greek language (Rheuma-Flux, eidos – resemblance) indicating a condition resembling rheumatism is an indefinite term applied to various conditions with pain or other symptoms which are of articular origin or related to other elements of the musculo skeletal system.

Classification of Joint Diseases

(Text book of orthopaedic & Traumatology – Natarajan)

I) Infective Arthritis:



II) Rheumatoid Arthropathy

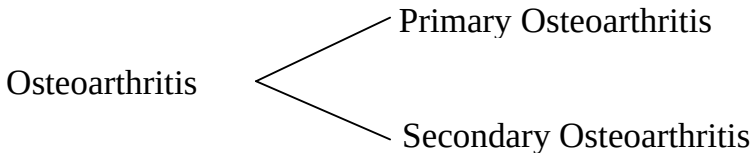
a) Rheumatoid Arthritis:

- ❖ Rheumatoid Arthritis (Adult)
- ❖ Juvenile Rheumatoid Arthritis (JRA)

b) Sero Negative Spondylo Arthropathy :

- ❖ Ankylosing Spondylitis
- ❖ Reiter's Disease
- ❖ Psoriatic Athritis
- ❖ Enteropathic Arthritis

III) Degenerative Arthritis:



IV) Neuropathic Arthropathy:

- ❖ Tabes – Charcot's Arthropathy
- ❖ Syringo Myelia
- ❖ Leprosy
- ❖ Diabetes Mellitus

V) Metabolic Arthritis:

- ❖ Gout
- ❖ Alkaptonuric Arthritis

VI) Arthritis in Systemic Disorder:

- ❖ Allergic Arthritis
- ❖ Haemophilic Arthritis

VII) Miscellaneous Joint:

- ❖ Villo – Nodular synovitis
- ❖ Synovial Chondromatosis

VIII) Hysterical Joint:

Introduction: Polyarthritis

Any arthritis that affects five or more joints. Arthritis is a medical term for joint arthritis. Polyarthritis is frequently caused by autoimmune conditions such as rheumatoid arthritis, psoritic arthritis and systemic lupus erythematosus but may also be caused by certain infections and cancers as well as other conditions.

Pathology:

Arthritis is the inflammation of all the component structures of the joint with involvement of the synovium, articular surfaces and capsule.

The following stages can be identified:

- Stage of synovitis
- Stage of reversible arthritis
- Stage of irreversible arthritis
- Stage of ankylosis

The critical stage of the disease is the involvement and destruction of the articular cartilage, as any gross damage to the cartilage is irreversible leading to ankylosis and loss of function.

Collagen diseases are systemic diseases affecting all connective tissues in the body. Many of these disorders have joint manifestations. The most important of these is **Rheumatoid Arthritis.**

Symptoms of Polyarthritis:

Swelling

Redness

Warmth

Bogginess of joint

Restricted movement

Deformation

Extra articular manifestations (lung

Blood vessel and eye symptoms)

Polyarthritis:

Polyarthritis is involvement of five or more jts or jt groups. In determining the cause it is helpful to consider whether the polyarthritis:

- ❖ Is symmetrical (approximately) or asymmetrical
- ❖ Shows predominant or equal involvement for upper and lower limbs.
- ❖ Shows predominant or equal involvement for large and small jts.
- ❖ Has accompanying peri articular involvement.
- ❖ Has accompanying extra-articular features as clue to the diagnosis.
- ❖ A large number of viral infections may cause arthralgia (Joint pain with no abnormal examination findings) and rapid onset of an acute symmetrical inflammatory poly Arthritis affecting small and large jts of upper and lower limbs that is usually self limiting within six weeks.
- ❖ These include parvovirus B_{19}, hepatitis B and C, mumps, rubella, chickenpox and infectious mononucleosis.
- ❖ The rapidity of onset, the presence of fever and the characteristic rash usually suggest the diagnosis.
- ❖ Arthritis usually precedes jaundice from hepatitis B.
- ❖ Rubella Arthritis mainly affects girls and women,. Occurring 1-7 days after the rash or 2-6 weeks after vaccination.
- ❖ Rubella is exceptional in that, although the symmetrical poly Arthritis settles, oligo Arthritis may persist for some months.
- ❖ Poly Arthritis that persists for more than 6 weeks is unlikely to be viral.
- ❖ A definitive diagnosis may be difficult in the first few months of onset but often becomes firmer as more characteristic features develop with time. However, certain patterns are characteristic and may be present at or soon after presentation.

Examples of extra articular features that associate with inflammatory oligo or poly arthritis.	
Clinical Features	**Disease Association**
Skin, nails and mucos membranes	
• Psoriasis, nail pitting and dystrophy	• Psoriatic arthritis
• Raynaud's	• Lupus, Scleroderma
• Photo sensitivity	• Lupus
• Livedo reticularis	• Lupus
• Splinter haemorrhages, nail fold infarcts	• Vasculitis
• Oral ulcers	• Lupus, reactive Arthritis, Behcet's
• large nodules (mainly extensor surfaces)	• Rheumatoid Arthritis, Gout
• clubbing	• Enteropathic Arthritis, metastatic lung cancer, endocarditis.
Eye	
• Uveitis	• Seronegative spond Arthritis.
• Conjunctivitis	• Reactive Arthritis
• Episcleritis, scleritis	• Rheumatoid Arthritis, Vasculitis
Heart, lungs	
• Pleuro-pericarditis	• Lupus, Rheumatoid Arthritis.
• Fibrosing alveolitis	• Rheumatoid Arthritis, lupus, other connective tissue disease.
Abdominal organs	
• Hepato splenomegaly	• Rheumatoid Arthritis, Lupus
• Haematuria, proteinuria	• Lupus, vasculitis scleroderma
• Urethritis	• Reactive Arthritis.
Fever, Iymphadenopathy	Infection, Systemic Juvenile Idiopathic Arthritis

- ❖ Rheumatoid Arthritis is by for the most common cause of chronic inflammatory, symmetrical poly Arthritis affecting small and large jts of upper and lower limbs.
- ❖ Tenosynovitis and bursitis (ie- synovial inflammation) are the main periarticular manifestations.
- ❖ Marked asymmetry, lower limb predominance and involvement of large more than small jt are all more characteristic of seronegative spond Arthritis.
- ❖ Concurrence of enthesitis associated diffuse periarticular swelling and inflammatory spondylitis may be further clinical markers of spond Arthritis.
- ❖ Lupus usually causes more arthralgia and wrist extensor tenosynovitis than over synovitis.
- ❖ Chronic poly Arthritis due to gout is inevitably preceded by a long history of acute attacks.
- ❖ Other causes of poly Arthritis are rare.
- ❖ For inflammatory poly Arthritis present for less than 6 weeks.
    - The full blood count
    - Liver function tests
    - Viral serology is often appropriate.
- ❖ For early persistant poly Arthritis of indeterminate cause appropriate initial investigation should include the full blood count.
    - ESR
    - CRP
    - Liver function
    - Rheumatoid factor
    - Antinuclear antibody
    - Radiographs of hands and feet.

Causes of Poly Arthritis	
Cause	**Characteristics**
Non inflammatory	
• Generalised Osteo Arthritis	• Very common, symmetrical, small and large jts, Heberden's nodes, only a few jts symptomatic at any one time.
• Haemo chromatosis	• Rare, small and large jts
• Acromegalic arthropathy	• Rare, mainly large jts, spine.
Inflammatory	
• Viral arthritis	• Very acute, self limiting
• Rheumatoid Arthritis	• Symmetrical, small and large jts, upper and lower limbs
• Seronegative spondarthritis i. Psoriasis ii. Reactive iii. Ankylosing spondylitis iv. Enteropathic arthropathy	• Asymmetrical, large > small jts, lower > upper limbs, spondylitis
• Lupus	• Symmetrical, small > large jts, joint damage uncommon
• Chronic gout	• Distal > Proximal jts, preceded by acute attacks
• Juvenile idiopathic Arthritis	• Symmetrical, small and large jts, upper and lower limbs
• Chronic sarcoidosis	• Symmetrical, small and large jts.
• Scleroderma & poly myositis	• Rare, small and large jts.
• Hypertrophic osteoarthropathy	• Rare, large > small jts, clubbing.

Degenerative Joint Disease or Osteo Arthritis:

Degenerative joint disease or osteoarthritis (OA) is a disorder characterized by progressive deterioration and loss of articular hyaline cartilage accompanied by proliferation of new bone and soft tissue in and around the involved joint.

Primary (Idiopathic) OA	:	No underlying cause is apparent.
Scondary OA	:	a predisposing factor is present, such as trauma, repetitive stress (occupation, sports) congenital abnormality, metabolic disorder, or other bone/joint diseases.
Erosive OA	:	term often applied to patients who have hand DIP/PIP OA associated with synovitis and radiographic central erosions of the articular surface.

Pathology:

Osteo arthritis (OA), also called degenerative joint disease (DJD), is the most common type of joint disease. It is characterised by the progressive erosion of articular cartilage. The term OA implies a role for inflammation in its pathogenesis; however, inflammatory cells are usually not prominent and are a secondary phenomenon. OA is now considered to be a disease of cartilage, in which intrinsic bio-chemical and metabolic alterations result in its breakdown.

The cardinal features are

1. Progressive cartilage destruction
2. subarticular cyst formation
3. Sclerosis of the surrounding bone
4. Osteophyte formation
5. Capsular fibrosis

Frequently the condition is initiated as chondro malacia patellae (Chondromalacia – cartilage softening). Due to continuous firction the joint surface of patello femoral joint is eroded and degenerated.

Degeneration of hyaline cartilage is the primary lesion. The cartilage is progressively eroded and bone matrix is exposed. The erosion is patchy with normal islands of cartilage in between.

The cartilage and perichondrium around the periphery of joint are stimulated which leads to elevation of nonarticular surface of joint above the remaining surface and later on projects circumferentially to give **'lipping'** appearance. There is synovitis with fibrosis and sub synovial connective tissue.

According to Harrison, there is proliferation of blood vessels, which leads to increased blood supply to subchondral bone with thinining of overlying cartilage due to pressure.

Cartilage is degenerated, which later on invaded by large blood vessels and finally replaced by bone. Oedema in subcondral marrow is followed by formation of mucinous fatty marrow and dilation of surrounding sinusoids. In center of these area mucoid secretion occurs. These cyst cavities expand by resorption of bone trabeculae. Osteoblastic activity surrounds these areas, which forms the sclerotic wall. According to other theories herniation of synovial fluid through cracks within denuded subchondral bone leads to cyst formation.

Outward cartilage growth, followed by ossification and local perioste-new bone formation mainly around the capsular attachments, leads to **"Osteophytic Lipping".**

Inflammation and metaplasia of synovial membrane occurs later on. Detached flakes of cartilage and metaplastic synovium give rise to cartilaginous and osteocartilaginous **"Loose Boides".**

Menisci are also degenerated which are extremely vulnerable to injury there after. Minimal or gross tears may occur. Though, in cruciate

ligaments degeneration takes place, generally they remain infact even in severe osteoarthritis. There is hypertrophy of infrapatellar pad.

The capsule and synovium are oftern thickened but cellular activity is slight, however, sometimes there is marked inflammation or fibrosis of the capsular tissues.

Causes of joint pain in patients with osteoarthritis:

Source	Mechnism
Synovium	Inflammation
Subchondral bone	Medullary hypertension, micro fractures.
Osteophyte	Stretching of periosteal nerve endings.
Ligaments	Stretch
Capsule	Inflammation, distention
Muscle	Spasm.

Risk facters for osteoarthritis

- ❖ Age
- ❖ Female sexGenitic factors,
- ❖ Major joint trauma,
- ❖ Repetitive stress (eg) vocational
- ❖ Obesity
- ❖ Congenital or developmental defects
- ❖ Prior inflammatory joint disease
- ❖ Metabolic or endocrine disorders

Clinical Manifestations:

OA is the most common form of joint disease. It can affect almost any joint, but usually occurs in weight-bearing and frequently used joints such as the knee, hip, spine and hands. The hand joints that are typically affected are the DIP, PIP or first CMC (thumb base); MCP involvement is rare.

Symptoms:

- Usually – related pain affecting one or a few joints (rest and nocturnal pain less common)
- Stiffness after rest or in morning may occur but usually brief (<30min)
- Loss of joint movement or functional limitation.
- Joint instability
- Joint deformity
- Joint crepitation ("Crackling")

Physical Examination:

- Chronic mono arthritis or asymmetric oligo/poly arthritis
- Firm or "bony" swellings of the joint margins, e.g.Heberden's nodes (hand DIP) or Bouchard's nodes (hand PIP)
- Mild synovitis with a cool effusion can occur but is uncommon
- Crepitance – audible creaking or crackling of joint on passive or active movement.
- Deformity, e.g., OA of knee may involve medial, lateral or patellofemoral compartments resulting in varus or valgus deformities.
- Restriction of movement, e.g. limitation of internal rotation of hip.
- Objective neurologic abnormalities may be seen with spine involvement (may affect intervertebral discs, apophyseal joints and paraspinal ligaments)

Evaluation:

- Routine lab work usually normal
- ESR usually normal but may be elevated in patients who have synovitis
- Rheumatiod factor, ANA studies negative

- ❖ Joint fluid is straw – coloured with good viscosity, fluid WBCs<2000/μz; of value in ruling out crystal – induced arthritis or infection.

Laboratory and Radiographic Findings:

The diagnosis of osteoarthirits is usually based on clinical and radiographic features. In the early stages, the radiograph may be normal, but joint space narrowing becomes evident, as articular cartilage is lost. A plain radiograph is the only useful investigation. This may show one or more of the typical features osteoarthiritis. They are.

- ❖ Focal narrowing of joint space
- ❖ Marginal osteophyte
- ❖ Subchon dral sclerosis
- ❖ Cysts
- ❖ Osteochondral (‘Loose”) bodies
- ❖ Deformity
- ❖ Chondro calcinois.

Diagnosis:

Usually established on basis of pattern of joint involvement, radiographic features, normal laboratory tests and synovial fluid findings.

Metabolic Disease:

Approximately 50% of people with haemochromatosis develop arthropathy, usually in their forties or fifties, which may predate other classic features. Presentation is usually with pain and stiffness of wrists, fingers and metacarpophalangeal joints, though hips, shoulders and knees are also commonly affected.

Radiographic changes resemble osteoarthritis with narrowing, sclerosis and cysts, but cysts are often multiple and prominent, there is little osteophyte, and atypical sites for osteoarthritis (e.g. radiocarpal joint, metacarpophalangeal joints) are targeted. About 30% have superimposed

pseudogout attacks and radiographic chondrocalcinosis as additional clues. Treatment of the haemochromatosis does not influence the arthropathy.

Acromegalic arthropathy:

Acromegalic arthropathy, mainly affecting knees, hips and shoulders with non-inflammatory usage pain and coarse crepitus, suggesting osteoarthritis, but normal or increased (not restricted) movement. Radiographic signs may include widening of joint spaces, squaring of bone ends, generalized osteopenia and tufting of terminal phalanges.

Viral Arthritis:

Most forms of viral arthritis are self-limiting. The usual presentation is with acute polyarthritis, fever or viral prodrome and rash. Parvovirus arthropathy is the most common and unlike children, adults may not have the characteristic facial rash. Diagnosis is confirmed by a rise in specific IgM. Polyarthritis may also rarely occur with hepatitis B and C, rubella and HIV infection.

Rheumatoid Arthritis:

Definition:

"Rheumatoid Arthritis is a symmetrical, destructive and deforming poly arthritis affecting small and large synovial joints with associated systemic disturbance, a variety of extra – articular features and the presence of circulating antiglobulin antibodies (Rheumatoid Factors)".

Epidemiology:

Rheumatoid Arthritis occurs throughout the world and in all ethnic groups. The prevalence of Rheumatoid Arthritis is approximately 1% of the population.

Women are affected approximately 3 times more often than men.

The disease starts most commonly between 3rd and 5th decades, but the age of onset follows a normal distribution curve and no age group is exempted.

80% of all patients developing the disease are between the ages of 35 to 50. The climate, Altitude and Geography do not appear to influence the disease.

Aetiology:

Definite cause is unknown, Host – genetic factors.

It may be familial. Family studies indicate a genetic predisposition of Rheumatoid Arthritis is found at approximately 4 times the expected rate in first degree relatives of individuals with seropositive disease.

Although the cause of Rheumatoid Arthritis remains tantalizingly obscure. There is increasing evidence that the disease is triggered by T.Lymphocyte activation in genetically predisposed individuals with HLA clears II Haplotypes.

Immunoregularity Abnormalities and Auto Immunity:

A triggering or persisting microbial infection. Eg. Streptococci, Diphtheroides, Mycoplasmas, Clostridumperfrigens. Viral infection-Rubella, Epstein Barr virus.

Onset:

In two third of the patient, it begins insideously with fatigue, anorexia, generalized weakness and vague musculoskeletal symptoms until the appearance of the synovitis becomes apparent. This prodrome may persist for weeks or months and defy diagnosis. Specific symptoms usually appear gradually as several joints, especially those of the hands, wrists, knees and feet become affected in a symmetric fashion.

In approximately 10% of individuals the onset is more acute with a rapid development of poly arthritis often accompanied by the constitutional symptoms including fever, lymphadenopathy and splenomegaly.

In approximately one third of the patients, the symptoms may initially be confined to one or few joints.

Although the pattern of joint involvement may remain asymmetric in a few patients, a symmetric pattern is more typical.

Pathology:

The condition is widespread but the brunt of the attack falls on synovium. The constant and characteristic feature is a chronic inflammation an in-constant but pathognomonic lesion is the rheumatoid nodule.

The Pathological changes, if unchecked proceed in three stages.

Stage I – Synovitis:

Early changes are vascular congestion, proliferation of synoviocytes and infiltration of the sub synovial layers by polymorphs, lymphocytes and plasma cells. There is thickening of the capsular structures, villous formation of the synovium and a cell – richeffusion into the joints and tendon sheaths. Though painful, swollen and tender, these structures are still intact and mobile and the disorder is potentially reversible.

Stage II – Destruction:

Persistant inflammation causes joint and tendon destruction. Articular cartilage is eroded, partly by proteolytic enzymes, party by vascular tissues in the fold of the synovial reflections, and partly due to direct invasion of the cartilage by a "Pannus" of granulation tissue creeping over the articular surface. At the margins of the joint, bone is eroded by granulation tissue invasion and oeteo clastic resorption. Similar changes occur in tendon sheaths causing teno synovitis invasion of the collagen bundles and eventually, partial or complete rupture of tendon. A synovial effusion often containing copious amount of fibrinoid material produces swelling of joints, tendon and bursae.

Stage III – Deformity:

The combination of articular destruction, capsular stretching and tendon rupture leads to progressive instability and deformity of the joint. By this time, the inflammatory process may have subsided; the emphasis is now on the mechanical and functional effects of the joint and tendon disruption.

Pathogenesis of Rheumatoid Arthritis:

The characteristic lesion of Rheumatoid arthritis is a diffuse proliferative synovitis. The synovitis is immunomediated but the initiating cause of the auto immune reaction is unknown.

Immune Mechanism and Rheumatoid Arthritis:

- About 80% of the patient has Rheumatoid factor positive. Rheumatoid factors can be of any isotope (IgM, IgG, IgA, IgE) but their distinguishing feature is the recognition of IgG as their Antigen.
- Serum Titre of Rheumatoid factor correlates roughly with the severity of Rheumatoid Arthritis.
- Rheumatoid Factor couples with autologus IgG to form immune complexes with in the articular space. Immune complexes blind complement system and activate it.
- Rheumatoid Factor in circulation and joints are formed locally by the inflammatory infiltrate of activated B cells and plasma cells.
- The products of activated complement are cheotactic fractions C3a and C5a which attract neutrophils to the joint and synovial membrane.
- Phagocytosis of Immune complexes by neutrophils follows with the release of collagenoses and Neutral peptidases. Collagenase is capable of degrading articular cartilage.

The joint damage in RA is of immune origin and appears in genetically predisposed individuals the precise trigger that initiates these reactions is still unknown.

Clinical Manifestations:

Clinical manifestations are classified under two headings.

- ❖ Articular manifestations
- ❖ Extra – articular manifestations

Signs and Symptoms of Articular Manifestations:

Any synovial joint in the body may be affected particularly in the more severe forms of the disease. Pain may initially be poorly localized to the joints. Pain in the affected joints aggravated by movements is the most common manifestation of established rheumatoid arthritis. It corresponds to the joint involvement but does not always correlate with the degree of apparent inflammation. Pain orginates predominantely from joint capsule which is supplied by pain fibres and is markedly sensitive to stretching or distension.

Swelling may also be an initial symptom. Clinically synovial inflammation causes swelling, tenderness and limitation of motion. Warmth is also evident on examination, especially of large joints such as the knee. Joint swelling results from accumulation of synovial fluid, hypertrophy of the synoviam and thickening of the joint capsule due to limitation of motion initially by pain. Generalised stiffness is frequent and is usually greatest after periods of inactivity. Morning stiffness of greater than one hour duration is an almost invariable feature of inflammatory arthritis. Fever of 40ºC occurs on occasion, temperature elevation in excess of 38ºC is unusual and suggests the presence of an inter current problem such as infection. Majority of patients experience weakness, Easy fatiguability, Anorexia, Weight loss as the constitutional symptoms. Muscle wasting, clinical weakness and atrophy of the skeletal muscles are common. Muscle atrophy may be evident with in weeks of the onset of rheumatoid arthritis.

Involvement of Individual Joints:

Hands and Wrist:

Rheumatoid arthritis often causes symmetric arthritis with characteristic involvement of certain specific joints such as proximal interphalangeal joints and metacarpophalangeal joints. The distal inter phalangeal joints are rarely involved.

In early course of the disease, there may be spindling of the progress due to synovial hypertrophy and effusion in the interphalangeal joints.

Later, marked synovial hypertrophy on the dorsum of the wrist with involvement of extensor tendon shoeath results in dropped finger. The same process in the palmar aspect may lead to carpal tunnel syndrome.

Persisting synovitis, weakening of the capsule, muscle wasting, tendon rupture and destruction of the articular surface leads to characteristic Rheumatoid hand deformity, which includes,

- **"Swan neck deformity"** with hyper extension of the proximal interphalangeal joints with fixed flexion of the distal interphalangeal joints.
- **"Button hole deformity" (Boutonniere deformity)** which includes fixed flexion of the proximal interphalangeal joints and extension of the distal interphalangeal joints.
- **"Z deformity"** of the thumb (Radial deviation at the wrist with ulnar deviation of the digits often with Palmar subluxation of the proximal interphalangeal joints.
- Hyper extension of the first interphalangeal joints and flexion of the first metacarpo phalangeal joint with consequent loss of thumb mobility and pinch.
- Palmar erythema is also common. Raynaud's phenomenon may occur in the early stage.

Feet and Ankles:

Active synovitis in the metatarsophalangeal joint can produce pain and tenderness best elicited by the lateral squeezing of the joints.

The synovial swelling of the active disease together with destruction of the ligament between the metatarsal heads may broaden the forefoot and separate the toes to produce the **"day light sign"**.

Deformities may also develop in the feet including eversion at the hind foot (subtalar joint), Plantar subluxation of the metatarsal heads, widening of the forefoot, hallux – vulgus and lateral deviation and dorsal subluxation of the toes. So the patient walks on the upprotected heads of the metatarsal bones. The patient complains of a feeling of walking on pebble's and the metatarsal heads are readily palpable on the sole of the foot.

In the hind foot calcaneal erosions, hallux – vulgus deformity are found. Rheumatoid synovitis may develop in the subtaloid and midtarsal joints. Chronic arthritis in this region can lead to **"Pes Plano – Valgus deformity"**

Knee Joints:

Knee joint is commonly involved with synovial hypertrophy, Chronic effusion and frequently ligamentous laxity. Pain and swelling behind the knee may be caused by extension of inflammed synovium into the popliteal space (Baker's cyst).

Wasting of quadriceps is present, Flexion contractures may develop. Both cruciate and lateral ligaments may be destroyed, resulting in gross joint instability and vulgus deformity or varus deformity.

Elbow and Shoulder Joints:

Inflammed olecranon bursae and Rheumatoid nodules around the elbow are common but true rheumatoid arthritis affecting the elbows is less common. Severe destructive changes can occur leading to **"Fixed flexion deformity"**.

Pain in the shoulder can be referred from the neck or be due to involvement of acromio clavicular joint, sub acromial bursa, rotator cuff and bicipital tendon as well as the gleno humeral joint.

Cervical Spine:

The upper cervical discs are frequently involved. The cervical vertebrae may become subluxed and this may cause serious neurological disorders.

The atlantoaxial articulations and their associated ligaments are frequently involved. Separation between the odontoid process and the first cervical vertebra exceeds the normal of 2 to 3 mm which can be detected by X-ray. They complain pain in the cervical spine which radiates upwards over the occiput and vertex to the fore head.

Atlanto axial dislocation may cause the vertebro basilar insufficiency or may produce neurological signs by direct pressure on the cord.

Extra Articular Manifestation:

General:

- Low grade fever
- Lymphadenopathy
- Weight loss
- Anorexia
- Anaemia & Lassitude

Rheumatoid Nodules:

Vasculitis:

Vasculitis most commonly occurs in Rheumatoid patients with long standing disease, significant joint involvement, positive Rheumatoid factor nodules present.

All size of blood vessels may be involved Rheumatoid vasculitis may cause cutaneous ulceration and gangrene of the digits.

- ❖ Pulmonary Manifestations
- ❖ Cardio Vascular Manifestations
- ❖ Haematological Manifestations
- ❖ Neuromuscular Manifestations
- ❖ Muscular changes
- ❖ Ocular Manifestations

Diagnosis:

The typical picture of bilateral symmetric inflammatory poly arthritis involving small and large joints in both the upper and lower extremities suggests the diagnosis.

Criteria for the Diagnosis of Rheumatoid Arthritis:

- ❖ Morning Stiffness > 1 hour
- ❖ Arthritis of three or more joint areas
- ❖ Arthritis of hand joints
- ❖ Symmetrical Arthritis
- ❖ Rheumatoid nodules
- ❖ Rheumatoid factor
- ❖ Radiological Changes
- ❖ Duration of 6 weeks or more

Diagnosis of Rheumatoid Arthritis is made with four or more criteria.

Investigations:

- ❖ **Haematological:**
  - ESR – increased in active stage
  - Serum Proteins – Hyperglobulinaemia with elevation of Gammas and Alpha 2 Globulins and Hypoalbulinaemia during acute Phase.
- ❖ **Immunological:**
  - Rheumatoid Factor (RF)
  - Anti – Nuclear Antibodies.

- **Special Investigations:**
  - Synovial fluid analysis
  - Synovial biopsy
  - Radiographic Evaluation

The primary value of radiography is to determine the extent of **cartilage destruction and bone erosion produced by the disease.**

Stages of X-ray Progression in Rheumatoid Arthritis:

- Periarticular osteoporosis
- Loss of articular cartilage (“joint space”)
- Erosions
- Subluxation and Ankylosis

- Arthroscopy
- Renal biopsy
- Pulmonary biopsy
- Ultra sound
- Scintigraphy
- CT scaning
- MRI
- Urine analysis
- Bio chemical analysis
- Miscellaneous

Sero Negative Spondylarthropathy:

Sero negative spondylarthropathy includes the following rheumatoid like conditions where the serum is negative form rheumatoid factor. They are

- Ankylosing spondylitis
- Reactive Arthritis, including Reiter’s syndrome
- Psoriatic Arthritis
- Enteropathic arthropathy.

Ankylosing spondylitis:

Ankylosing spondylitis is a chronic, progressive and crippling disease affecting the spine. The exact etiology is unclear. Ankylosing spondylitis have been found to be more prevalent in certain races and hence shows a genetic predisposition. It is related to certain tissue types of the Human Leucocyte Antigen (HLA) system. The majority of ankylosing spondylitis patients are found to belong to HLA B 27 group.

Clinical Features:

The disease occurs in the third and fourth decades of life and is more common in males. The patients present with complaints of diffuse pain in the back and vague pain in other joints.

On examination, the movements of the whole spine are limited, the sacro-spinalis muscles are in spasm, but there is no point of localized tenderness in the spine. There is tenderness over one or both sacro-iliac joints. The chest expansion is diminished to less than 5cms due to the involvement of the costovertebral joints.

In the late stages the whole spine including the cervical spine is rigid and the patient is bent forward. The classical description refers to this late stage where the patient is totally stiff and disabled with ankylosis of both hips and flexion deformity of knees. The patient is bent over with the eyes facing the ground.

One of the last joints to be affected is the temporo mandibular joint. Extra skeletal manifestations include acute iritis, aortic valve incompetence and pulmonary complications due to costovertebral ankylosis.

Diagnosis:

Criteria for diagnosis of ankylosing spondylitis (Rome, Newyork Criteria) include

- ❖ Diffuse pain in the spine of some months duration
- ❖ Limitation of all spinal movements for some months
- ❖ Diminished chest expansion

Laboratory Findings:

The blood examination shows raised ESR and anaemia. The serum is negative for Rheumatoid factor. The test for HLA – B 27 is positive.

Radiological Features:

The earliest changes involve the sacro-iliac joints. The joint margins become hazy and the joint space is widened. This is followed by subchondral erosion and sclerosis. In the final stages, the sacro iliac joints show total fusion.

In the early stages, the lumber spine shows in the lateral view, the filling up of the concavity of the anterior border causing a 'squaring' appearance of the vertebral body. Later on, extensive calcification of the anterior longitudinal ligament occurs. In the final stage, the calcification of the lateral ligaments produces the Bamboo spine appearance in the antero posterior view. The interspinous ligaments are also calcified. In the later stages, the cervical spine is also involved with fusion of posterior intervertebral joints.

Psoriatic Arthritis:

Psoriatic arthritis is a poly arthritis seen in about 10% of the patients with psoriasis. The most common type a) is the one involving the distal interphalangeal joints of the hands and feet with psoriatic nail changes Metacarpo phalangeal joints are never involved in psoriatic arthritis, b) arthritis mutilans is a severe form where there is marked destruction of joints, c) symmetrical poly arthritic type, d) oligo arthritic type, e) spondylarthritic type,

Treatment is on the same lines as for the rheumatoid arthritis along with the treatment for psoriasis.

Enteropathic Arthritis:

Chronic inflammatory bowel diseases like regional enteritis (Ocohn's disease) and ulcerative colitis are associated with arthritic lesions in about 10% of the cases. There is a peripheral poly arthritis or involvement of the spine. The joint condition shows remissions and exacerbations along with the activity of the underlying bowel disease. Treatment of the bowel disease usually clears the joint disease also.

Reiter's Disease:

It is characterized by a triad of seronegative oligoarthritis, conjunctivitis and nonspecific urethritis, 1-3 weeks following bacterial dysentery or exposure to sexually transmitted disease. Arthritis occurring alone following sexual exposure or enteric infection is known as reactive arthritis.

Arthritogenic Bacteria in Reactive Arthritis:

- Salmonella
- Shigella
- Campylobacter
- Yersinia
- Chlamydia

Clinical Features:

- It presents with monoarthritis of a knee or and an asymmetrical inflammatory arthritis of interphalangeal joints.
- Patients can have heel pain, Achilles tendonitis or plantar fascilitis with presence of circinate balanitis. The presence of rash of keratoderma blennorrhagica is diagnostic of Reiter's disease in the absence of classifical triad.
- Skin lesions are faint macules, vesicles and pustules on the hands and feet to marked hyperkeratosis with plaque like lesions spreading to scalp and trunk.

- ❖ Dystrophy of nail and massive subungual hyperkeratosis may be seen.
- ❖ Ocular involvement (mildbilateralconjunctivitis) subsides spontaneously within a month. Iritis can occur in 10% of cases.
- ❖ Symptomatic urethritis (mild dysuria and clear sterile discharge) is seen in most cases.
- ❖ Self limiting arthritis is seen in all cases.
- ❖ The extra articular features are
    - Conjunctivitis
    - Iritis
    - Aortic Regurgitation
    - Cardiac conduction defects
    - Peripheral neuropathy

Systemic Lupus Erythematosus (SLE):

It is a multisystem connective tissue disease of unknown cause in which tissues and cells are damaged by pathogenic autoantibodies and immune complexes.It is more common in women of child bearing age (Male: Female is 1:9).

Etiology and Pathogenesis:

- ❖ There is disturbance of immune regulation
- ❖ Genetic factors are involved (HLA – B8 and DR 3)
- ❖ Involvement of environmental factors (Sunlight).
- ❖ Drugs – Oestrogens, Oral contraceptives, Quinidin, INH, hydralazine, chlorpromazine, Practolol, methyldopa, Phenytoin, a interferon and procainamide (most frequent)
- ❖ Infection is thought to be one of the etiological factors.
- ❖ Immunologically – mediated tissue damage, also results.
- ❖ Miscellaneous – Ingested alfalfa sprout and chemicals like hydrazines, hair dyes are also implicated.

Autoantibodies present in patients with Systemic Lupus Erythematosus.

Gout:

Gout is a true crystal deposition disease. It can be defined as the pathological reaction of the joint or periarticular tissues to the presence of Monosodium Urate Monohydrate (MSUM) crystals. Clinically, this may present as inflammatory arthritis, bursitis, tenosynovitis, cellulites or as nodular ('Tophaceous') crystal deposits. Prolonged hyperuricaemia is necessary, but is alone not sufficient, for development of gout.

Epidemiology:

The prevalence of gout varies between populations but is around 1% with a strong male predominance (> 10:1). Prevalence increases with age and increasing serum uric acid concentration. 'Primary' gout is almost exclusively a male disease and the most common cause of inflammatory arthritis in men over the age of 40. 'Secondary' gout, due to renal impairment or drug therapy, mainly affects people over the age of 65 and is the form most usually seen in women. Hyperuricaemia can be defined in two ways.

- As a serum uric acid level above the theoretical solubility of MSUM in physiological conditions (0.42 mmol/l).
- As a serum uric acid level greater than 2 standard deviations above the mean for the population (c.0.40 mmol/l for men, 0.35 mmol/l for women).

Probably 95% of hyperuricaemic subjects never develop gout.

CLINICAL FEATURES

System involved	Manifestations
Skin	Fixed, erythematous rash over malar regions (Butterfly rash), discoid rash, alopecia, diffuse maculo papular rash, urticaria, erythema multiforme, lichen planus like lesions; photosensitivity, psori form lesions (subacute cutaneous lupus), oral ulcers, vasculitis.
Renal	Proteinuria, nephrotic syndrome, focal, proliferative glomerulo nephritis, hypocomplementemia and renal failure.
Nervous System	Meninges, spinal cord, cranial and peripheral nerves are involved. Patients can have cognitive dysfunction, organic brain syndromes (psychosis, neurosis), pseudotumor cerebri, extrapyramidal and cerebellar involvement. Hypothalamic dysfunction causes inappropriate ADH secretion.
Vascular	Thrombosis can occur due to vasculitis, antibodies against phospholipids, (lupus anticoagulant, anti cardiolipin antibodies), and immune complex mediated destruction.
Hematological	Anemia of chronic disease, leucopenia, mild thrombocytopenia.
Cardiopulmonary	Anemia of chronic disease, leucopenia, mild thrombocytopenia. Pericarditis, pericardial effusion, constrictive pericarditis, myocarditis (arrhythmias, CCF) sudden death due to MI, and Libman-sach's endocarditis causing MR or AR. Pleurisy and Pleural effusion are common. Lupus pneumonia, interstitial fibrosis, pulmonary hypertension and ARDS can occur.
Gastrointestinal	Nausea, diarrhoea, vague discomfort, lupus peritonitis, vasculitis of intestine, intestinal perforation, GI motility disorders and intestinal pseudo obstruction.
Ocular	Retinal vasculitis, conjunctivitis, episcleritis and blindness can occur (fundus shows sheathed, narrow retinal arterioles and cystoid bodies).
Musculoskeletal system	Myopathy, myositis and ischemic bone necrosis are common; Arthritis, arthralgia which can be transient or persistent leading to chronic inflammatory arthritis and tenosynovitis causing deformities and contractures.
Systemic	Fatigue, malaise, fever, anorexia and weight loss can occur.

Clinical Features:

Acute Gout:

Typical attacks have the following characteristics:

- Extremely rapid onset, reaching maximum severity in just 2-6 hours, often waking the patient in the early morning.
- Sever pain, often described as the “worst pain ever”.
- Extreme tenderness – the patient is unable to wear shocks or to let bedding rest on the joint.
- Marked swelling with overlying red, shiny skin.
- Self limiting over 5-14 days, with complete return to normality.

Chronic Tophaceous Gout:

Large MSUM crystal deposits produce irregular firm nodules (“tophi”) at the usual sites for nodules around extensor surfaces of fingers, hands, forearm, elbows, Achilles tendons and sometimes the helix of the ear. Marked asymmetry, locally and between sides, is characteristic. The white colour of MSUM crystals may be evident and permit distinction from rheumatoid nodules. Large nodules may ulcerate, discharging white gritty material and associating with local inflammation (erythema, pus) even in the absence of secondary infection. Although tophi are usually a very late feature, they may appear surprisingly rapidly, in under 1 year, in patients with chronic renal failure.

The joints most commonly involved with signs of damage and varying degrees of synovitis are the first metatarsophalangeal joint, midfoot, finger joints and wrists, occasionally with severe deformity and marked functional impairment, especially of feet and hands. As with tophi, asymmetry is characteristic.

Secondary gout may present with painful, sometimes discharging tophi without preceding acute attacks. This is particularly seen in older, mainly female patients with nodal osteoarthritis who develop tophi in and

around their osteoarthritic finger joints as a consequence of chronic (> 1-2 years) diuretic therapy.

Juvenile Idiopathic Arthritis:

Althouth MSK pain is prevalent in children, inflammatory arthritis is relatively rare compared to adults (<0.01% prevalence). Juvenile idiopathic arthritis (JLA) is defined as persistent (> 6 weeks) inflammatory arthritis that begins before age 16 for which no specific cause can be found. There are no specific diagnosis of exclusion. A list of some of the alternative diagnoses that may require consideration in a child with MSK pain and apparent joint swelling.

The aetiology of JLA is unknown, though both genetic and environmental factors are thought to be involved. JLA is classified according to the pattern of onset of arthritis in the first few months. This simple descriptive classification has prognostic significance and helps guide treatment selection.

Sarcoidosis:

Acute self-limiting arthritis, presenting as polyarthralgia and erythema nodosum, may accompany the onset of acute sarcoidosis. Chronic sarcoidosis may associate with a more persistant arthritis that targets the same joints.

Scleroderma:

Sclerodema is a generalized disorder of connective tissue affecting the skin, internal organs and vasculature. The clinical hallmark is the presence of sclerodactyly in combination with Raynaud's or digital ischaemia, The peak age of onset is in the fourth and fifth decades, and overall prevalence is 10-20 per 100 000 with a 4:1 female : male ratio. It is subdivided into diffuse and limited disease, the latter also termed 'CREST syndrome' (Calcinosis, Raynaud's, oesophageal involvement, Sclerodactyly, Telangiectasia)

International League Against Rheumatism (ILAR) classification of Juvenile Idiopathic Arthritis		
Pattern	**Definition**	**Main Target**
Oligoarthritis		
Persisting	Arthritis of 1-4 joints in first 6 months of disease	Young girls
Extending	Arthritis restricted to 1-4 joints in first 6 months that subsequently develops into polyarthritis	Young girls
Poly arthritis		
Rheumatoid factor (RF) – Negative	Arthritis of > 4 joints in first 6 months	Young girls
Rheumatoid factor (RF) - Positive	Arthritis of > 4 joints in first 6 months, x 2 positive serum rheumatoid factor tests 3 months apart.	Older, adolescent girls
Psoriatic arthritis	Arthritis + psoriasis, or Arthritis + family history of psoriasis and either dactylitis or nail pitting/onycholysis	Older girls and boys equally
Enthesitis – related arthritis	Arthritis + enthesitis, or Arthritis + two of: Sacroiliac joint tenderness Inflammatory spinal pain HLA –B27 Anterior uveitis Family history of uveitis, Spondarthritis or Inflammatory_bowel disease	Older boys
Systemic arthritis	Arthritis + fever > 2 weeks, evanescent skin rash	Under 2, girls and boys equally
Other arthrities	Patients who fit no category or more than one category	
Children under the age of 16 at onset of symptoms with persistent features of arthritis for at least 6 weeks.		

Aetiology and Pathogenesis:

The aetiology is unknown, with no consistent genetic, geographical or racial associations. Environmental factors are important in isolated cases that result from exposure to silica dust, vinyl chloride, hypoxia resins and trichloroethylene.

Early in the disease there is skin infiltration by T lymphocytes and abnormal fibroblast activation that leads to increased production of extra cellular matrix in the dermis, primarily type 1 collagen. This results in symmetrical thickening, tightening and induration of the skin (sclerodactyly). In addition to skin changes there is arterial and arteriolar narrowing due to intimal proliferation and Vessel wall inflammation. This endothelial injury causes release of vasoconstrictors and platelet activation, resulting in further ischaemia.

Polymyositis:

The idiopathic inflammatory myopathies (IIMs) are rare connective tissue disorders defined by the presence of muscle weakness and inflammation. The incidence is 2-10 per million/year with no significant world-wide variations. The aetiology is unknown and genetic associations differ amongst ethnic groups. The most common clinical forms of IIM are polymyositis, dermatomyositis and inclusion body myositis. Other systemic autoimmune diseases such as SLE or vasculitis can also cause myositis, whilst organ specific autoimmune disease (e.g. thyroid) may impair muscle function without causing muscle inflammation. Usually only skeletal muscle is affected. Occasionally, the distribution is focal (e.g. orbital myositis).

Juvenile Rheumatoid Arthritis:

Juvenile Rheumatoid Arthritis (JRA) is one of the more common connective tissue diseases of children and is a major cause of functional disability in this age group. By definition, it begins before the age of 16 and most patients are diagnosed during early childhood. There is 2:1 female

predominance except in the subgroup that has a systemic onset, in which the sexes are equally affected. JRA differs from R.A. in adults.

In that

- ❖ Oligo Arthritis is more common
- ❖ Systemic onset is more frequent
- ❖ Large joints are affected more than smaller joints
- ❖ Rheumatoid nodules and Rheumatoid factor are usually absent
- ❖ Antinuclear antibody seropositivity is common.

Neuropathic Arthropathy:

Aetiology:

Neuropathic joints are a chronic disease of the joint characterised by extensive disorganisation of the joint but no pain or inflammatory signs. It was first described by charcot as a complication of tabes dorsalis and hence called charcot's joint.

The conditions that cause neuropathic arthropathy are,

- ❖ Tabes dorsalis – Hip, Knee
- ❖ Syringomyelia – Shoulder, elbow
- ❖ Leprosy – Ankle and foot
- ❖ Diabetes – Ankle and foot
- ❖ Iatrogenic – Repeated intra articular injections of hydrocortisone in a bad surgical environment.

The cause of this gross destruction and disintegration lies in the nervous system. It is believed to result from the loss of proprioceptie and sensory impulses from the articular structures. The joint undergoes degeneration and destructive changes due to repeated minor trauma, when the sensory and autonomic nerve supply to the joint structures are lost. This explains the total absence of pain in the neuropathic joint.

Alkaptonuric Arthritis:

Alkaptonuria is a congenital disorder of amino acid metabolism affecting the joints. The break down of the amino acid tyrosine does not go

beyond the stage of homogentisic acide due to the absence of its oxidizing enzyme. Hence homogentisic acid appears in the urine. This condition is rare.

Haemophilic Arthritis:

Haemophilia is a disease characterised by a bleeding diathrosis due to a defect in the clotting mechanism of the blood. It is a hereditary disease affecting males but transmitted through the females. Involvement of joints is an important complication of haemophilia.

The patient is usually an adolescent boy with a history of previous bleeding episodes following cuts of tooth extraction. He presents with an acutely swollen knee or swollen hip with flexion deformity, haemorrhage into joints.

The joints usually involved are the knees, ankles, elbows and hips.

Physical Therapy (Physiotherapy)

Physiotherapy is the application of physical agents and principles to pathological conditions for the purpose of producing therapeutic effects.

Physiotherapy includes

1. Active exercise
2. Passive joint movements
3. Local heat
4. Massage
5. Electrical stimulation of Muscles
6. Ultra sound therapy
7. Light therapy, Ultraviolet rays and infrared rays.

Exercise Therapy:

In Rheumatoid Arthritis, Exercise therapy is extensively used to prevent deformitis and mobilise the stiff joints. Early movement will prevent the muscles from degeneration and the joints from becoming weakened and stiff.

A graduated plan of rehebilitation and muscle training is wiser. One should take as much exercise as possible but must not allow the muscles and joints to become too tired.

Active exercise is given to mobilize joints, strengthen muscles, improve co-ordination or balance.

Passive Joints Movements:

The chief use of passive joint movement is to preserve full mobility when the patient is unable to move the joint actively.

Types of Exercise:

1. Range of Motion Exercises / Stretching Exercises:

Stretching exercise involve moving a joint as it will comfortably go through its full range of motion or stretch. This exercise help to maintain normal joint movement or restore movement that has been lost.

Clinical Assessment of Joint Motion:

The most widely used and recommended instrument is the universal Goniometer, sometimes called as Arthrometer. Basically, it is a protractor, to the center of which two long slender arms or levers are attached. Usually only one of the arms is movable but many variations in design are possible.

Normal values for range of motion. This offer a basis for comparison of values.

2. Strengthening Exercises:

Strengthening Exercises helps to maintain or increase the strength and power of the muscles.

3. Limbering up Exercises:

Help to reduce morning skiffness or stiffness after staying in one position too long by doing the Range-of-motion exercises each day only a few times to loosen up.

Details of Range-of-Motion Exercises:

1. Upper Extremities:

Shoulder:

a. Arms at side with Elbow straight, bring arms forward – upward by ear.

b. Arms at side with Elbow straight, take arms sideward – upward overhead.

c. Arms at side bend elbow to right angle and take hands apart.

Elbow:

a. Bend elbow, touching fingers to top of shoulder.

b. Straighten elbow.

Forearm:

Elbows bent, turn palm of the hand and then back of the hand towards face.

Wrist:

a. Keeping forearm steady, move the wrist up and down as in waving.

b. Again hold forearm steady, move the wrist up and down as in hand shaking.

c. Make circle with hands.

Hand and Fingers:

a. Make tight fist

b. Open fingers as wide as possible.

c. With the hand open spread fingers away from each other and then together.

d. Touch tip of the thumb to the tip of each fingers.

e. Bend the thumb in toward palm of the hand.

2. Lower Extremities:

Knee:

Sit with your feet off the floor. Lift the leg and then allow it to return to the bent position slowly.

Ankle:

a. Pull foot up and in, then push back down.

b. Make circle with foot

c. Pull foot in toward other foot

d. Pull foot to outside

MATERIALS AND METHODS

The disease **"Santhuvatham"** has been dealt in the book **Yugi Muni Vaidhya Chindhamani**. Patients were selected according to the symptoms mentioned in Santhuvatham.

Selection of the Patients:

For this clinical study 20 patients of both sexes and of varying age group suffering from Santhuvatham were selected and admitted in the In patient ward and another 20 patients were also treated with the trial medicines in the out patients department of Government Siddha Medical College, Palayamkottai.

In this study, the detailed clinical history was taken from the patients. Special attention were laid on the pain and stiffness, excessive salivation, dryness of tongue regarding their nature, site of occurrence, mode of onset and severity as loss of function. The seasonal variation and precipitating factors like emotional stress, trauma, change of climate were enquired. Constitutional symptoms like easy fatiguability, anorexia, weight loss, pyrexia were noted. Ocular complaints like conjunctivitis, iritis, keratolysis, Siogren's syndrome, rheumatoid scleritis and genitourinary tract disorders were noted.

The socio economic status, family history and other significant disease already treated were carefully noted.

For this purpose the case sheets were prepared, based on both siddha and modern concept were maintained separately for all patients.

Investigations:

The symptoms of santhuvatham were more or less correlated with poly arthritic conditions of (Rheumatological and collagen diseases) in modern medicine. So investigations meant for such diseases were done for santhuvatham also. Some of these are routine blood tests, urine tests, stools examination and specific tests such as rheumatoid arthritis factor,

radiographic evaluation etc. Besides this blood sugar, blood urea, serum cholesterol were also investigated.

On the basis of these investigations modern diagnosis and parallel siddha diagnosis was made with the help of the following criteria, the mukkutra nilaigal, envagaithervugal, elu udal kattugal, nilam, mummalam, kalam, vayathu etc.

Investigations were found to be useful in assessing the progress of the disease and prognosis of the patient.

Thus the patients were selected and managed as follows.

Evaluation of the Trial Medicine:

The medicines selected for the dissertation were subjected to pharmacological and Bio-chemical analysis. The analysis were made in the pharmacology and Bio-chemistry departments of Government siddha medical college, palayamkottai.

Management:

"விரேசனத்தால் வாதம் தாழும்"

The vitiated Vatham can be brought down by a laxative (or) purgative since santhu vatham is a vatha disease, nilavagi choornam was used as a laxative. All the patients were given 10gm of nilavagai choornam with hot water at bed time for only one day.

For the dissertation work Meganathi kulligai and Arrkkathy Thylam are the specific medicines selected. All the two medicines were prepared (on by myself) in the post graduate practical hall with the knowledge of my teaching staffs of the post – graduate department.

RESULTS AND OBSERVATION

Results were observed with respect to the following criteria.

- ❖ Sex distribution.
- ❖ Age distribution.
- ❖ Kaalam.
- ❖ Gunam
- ❖ Paruva Kalam.
- ❖ Thinai.
- ❖ Socio-Economic status.
- ❖ Aetiological factors.
- ❖ Mode of Onset.
- ❖ Clinical Manifestations
- ❖ Systemic Examination
- ❖ Incident of poly Arthritic conditions.
- ❖ Gradation of pain, Joint swelling and Restricted movements.
- ❖ Incidents of individual joint involvement.
- ❖ Deformities of joints.
- ❖ Disturbances of vatha, pitha and kapha
- ❖ Conditions of Udal Thathukkal.
- ❖ Condition of Envagai Thervugal.
- ❖ Grading of Arthritis.
- ❖ Gradation of Results.
- ❖ Radio graphic Findings.

1. Sex Distribution:

Table 1: Illustrates Sex Distributions and its Relative Percentage

S. No.	Sex	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Male	9	45	6	30
2.	Female	11	55	14	70

From the above table, it is clear females were mostly affected than males.

2. Age Distribution:

Table 2: Illustrates the age distribution and its relatives percentage

S. No.	Age group in year	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	1-20	-	-	-	-
2.	21-30	-	-	1	5
3.	31-40	2	10	3	15
4.	41-50	1	5	4	20
5.	51-60	11	55	6	30
6.	Above 60	6	30	6	30

The above table shows that 55% of IP patients were in the age group of 51-60 years and 20% of OP patients were in the age group of 41-50 years.

3. Kalam:

In siddha lliterature age of individual is fixed as 100 and into 3 kalam as,

- Vatha kalam – first 33 years & 4 months
- Pitha kalam – Second 33 years & 4 months
- Kapha kalam – Third 33 years & 4 months

The data given below are according to the patient's age during admission.

Table 3: Illustrates the kalam

S. No.	Kalam	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Vatha kalam	-	-	2	10
2.	Pitha kalam	19	95	15	75
3.	Kapha Kalam	1	5	3	15

It is seen that most of the cases were in pitha kalam.

4. Gunam

Table 4 Ill ustrates Constitution of Gunam

S. No.	Gunam	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Sathuvam	-	-	-	-
2.	Rajotham	20	100	20	100
3.	Thamogunam	-	-	-	-

It is seen that most of the cases had Rajotham**.**

5. Paruva Kalam:

Table 5: Illustrates the incidence of the disease

S. No.	Paruva Kalam	Months	In Patients (IP)		Out Patients (OP)	
			No. of Cases	Percentage	No. of Cases	Percentage
1.	Kar Kalam	Aavani, Purattasi	18	90	9	45
2.	Koothir Kalam	Iyppasi, Karthigai	-	-	2	10
3.	Munpani Kalam	Markazhi, Thai	-	-	-	-
4.	Pinpani Kalam	Masi, Panguni	-	-	-	-
5.	Elavenil Kalam	Chithirai, Vaikasi	--	-	-	-
6.	Muthuvenil Kalam	Aani, Aadi	2	10	9	45

The above table shows that 90% of IP patients were admitted in Kaar Kalam and 45% of OP patients were treated in Muthuvenil Kalam, Kaar kalam.

6. Thinai (The habitat of the patients):

Table 6: Illustrates the Thinai

S. No.	Thinai	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Kurinji	-	-	-	-
2.	Mullai	-	-	-	-
3.	Marutham	20	100	20	100
4.	Neithal	-	-	-	-
5.	Palai	-	-	-	-

All the cases were from Marutha Nilam.

7. Socio – Economic Status:

Table 7: Illustrates the socio-economic status

S. No.	Socio – Economic Status	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Rich	-	-	-	-
2.	Middle Class	-	-	2	10
3.	Poor	20	100	18	90

From the above table cent percent of IP patients and 90% of OP patients were belonged to poor socio-economic status.

8. Aetiological Factors:

Table 8: Illustrates the Aetiological Factors

S. No.	Precipitating Factors	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percen tage	No. of Cases	Percen tage
1.	Positive family history	3	15	5	25
2.	Positive previous history	3	15	2	10
3.	Miscellaneous	14	70	13	65

The above table shows that 70% of IP patients and 65% of OP patients had miscellaneous reasons.

9. Mode of Onset:

Table 9: Illustrates the Mode of onset

S. No.	Mode of Onset	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Acute	2	10	1	5
2.	Gradual	18	90	19	95

The table shows that 90% of IP patients and 95% of OP patients had gradual onset.

10. Clinical Manifestations:

Table 10: Illustrates the Symptoms

S. No.	Symptoms	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Joint Stiffness	20	100	20	100
2.	Pain on extremities	20	100	20	100
3.	Body pain	18	90	19	95
4.	Inflammatory symptoms of joints	20	100	20	100
5.	Functional disability of extremities	20	100	20	100
6.	Sleeplessness	15	75	12	60
7.	Fever	8	40	6	30
8.	Loss of appetite	10	50	5	25
9.	Loss of weight	4	20	2	10
10.	Constipation	18	90	10	50
11.	Easy fatiguability	20	100	20	100

From the above table cent percent of IP and OP patients had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability.

11. Systemic Examination:

Table 11: Illustrates signs of Systemic Examination

S. No.	Signs	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Subcutaneous nodules	1	5	2	10
2.	Muscle wasting	4	20	5	25
3.	Ophthalmic Manifestation	-	-	-	-
4.	Hepatomegaly	-	-	-	-
5.	Splenomegaly	-	-	-	-
6.	Respiratory system	-	-	-	-
7.	Cardiovascular system	-	-	-	-
8.	Central nervous system	-	-	-	-

The above signs were observed in the systemic involment of Poly Arthritis patients.

Out of 20 In Patients, 5% of cases had subcutaneous nodules, 20% of cases had Muscle wasting and out of 20 Out Patients, 10% of cases had subcutaneous nodules, 25% of cases had Muscle wasting.

12. Incidence of Poly Arthritic conditions:

Table 12: Illustates Incidence of types of Poly Arthritis

S. No.	Types of Arthritis	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Rheumatoid Arthritis	5	25	5	25
2.	Ankylosing spondylitis	-	-	-	-
3.	Reiter's Syndrome	-	-	-	-
4.	Psoriatic Arthritis	-	-	-	-
5.	Enteropathic Arthritis	-	-	-	-
6.	Postmenopausal Arthritis	-	-	-	-
7.	Osteo Arthritis	15	75	15	75
8.	Reactive Arthritis	-	-	-	-

Out of 20 In Patients and 20% Out Patients, 75% of cases had resemblance of Osteo Arthritis and 25% of cases had resemblance of Rheumatoid Arthritis.

13. Gradation of Pain, Joint Swelling and Restricted Movements:

Table 13 : Illustrates Grades of Signs and Symptoms

S. No.	Signs and Symptoms	In Patients (IP)				Out Patients (OP)			
		No. of cases and Percentage				No. of cases and Percentage			
		Mild	Moderate	Severe	Total	Mild	Moderate	Severe	Total
1.	Pain	5(25%)	9(45%)	6(30%)	100%	4 (20%)	9(45%)	7 (35%)	100%
2.	Joint Swelling	4(20%)	12(60%)	4(20%)	100%	4 (20%)	8(40%)	8 (40%)	100%
3.	Restricted Movements	5(25%)	7(35%)	8(40%)	100%	6 (30%)	10(50%)	4 (20%)	100%
4.	Muscle Wasting	2(10%)	2(10%)	-	20%	3 (15%)	2(10%)	-	25%

14. Incidents of individual Joint involvement :-

Table 14 : Illustrates incidents of Joints involvement

S. No.	Joints involved	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Distal interphalangeal joint	5	25	5	25
2.	Proximalinterphalangeal joint	5	25	5	25
3.	Metacarpophalangeal Joint	5	25	5	25
4.	Wrist Joint	5	25	5	25
5.	Elbow joint	1	5	-	-
6.	Shoulder joint	-	-	-	-
7.	Temporomandipular Joint	-	-	-	-
8.	Sternoclavicular Joint	-	-	-	-
9.	Cervical spine	-	-	-	-
10.	Hip joint	-	-	-	-
11.	Knee joint	20	100	20	100
12.	Ankle joint	3	15	5	25
13.	Metatarsophalangeal joint	3	15	5	25
14.	Lumbar Spine	-	-	-	-
15.	Thoracic Spine	-	-	-	-

15. Deformities of Joints:

Table 15: Illustrates Deformities of Joints

S. No.	Deformities of joints	In Patients (IP)		Out Patients (OP)	
		No. of Cases	Percentage	No. of Cases	Percentage
1.	Interphalangeal Joint	3	15	2	10
2.	Metacarpophalangeal Joint	3	15	2	10
3.	Wrist Joint	-	-	-	-
4.	Elbow Joint	-	-	-	-
5.	Shoulder Joint	-	-	-	-
6.	Hip Joint	-	-	-	-
7.	Knee Joint	9	45	8	40
8.	Ankle Joint	-	-	-	-
9.	Metatarso phalangeal Joint	-	-	-	-
10.	Spine	-	-	-	-

16. Disturbances of Vatha, Pitha and Kapha:

Table 16: Illustrates the Disturbances of Mukkuttam

Particulars	In Patients (IP)		Out Patients (OP)	
	No. of cases	Percentage	No. of cases	Percentage
Vatham				
Piranan	-	-	-	-
Abanan	18	90	10	50
Viyanan	20	100	20	100
Uthanan	-	-	-	-
Samanan	20	100	20	100
Nagan	-	-	-	-
Koorman	3	15	2	10
Kirukaran	8	40	2	10
Devathathan	15	75	10	50
Dhananjeyan	-	-	-	-
Pitham				
Anarpitham	10	50	5	25
Ranjagapitham	10	50	10	50
Prasakapitham	2	10	-	-
Alosakam	3	15	2	10
Sathagam	20	100	20	100
Kapham				
Avalambagam	20	100	20	100
Kilethagam	10	50	5	25
Pothagam	-	-	-	-
Tharpagam	-	-	-	-
Santhegam	20	100	20	100

17. Conditions of Udal Thathukkal:

Table 17: Illustrates the conditions of Udal Thathukkal

S. No.	Udal Thathukkal	In Patients (IP)		Out Patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Saram	20	100	20	100
2.	Senneer	20	100	20	100
3.	Oohn	20	100	20	100
4.	Kozhuppu	20	100	20	100
5.	Enbu	20	100	20	100
6.	Moolai	-	-	-	-
7.	Sukkilam / suronitham	-	-	-	-

Out of 20 In Patients and 20 Out Patients Saram, Senneer, Oohn, Kozhuppu and Enbu were affected in 100% of cases.

18. Conditions of Envagai Thervugal :-

Table 18 : Illustrates the conditions of Envagai Thervugal

S. No.	Envagai Thervugal	In Patients (IP)		Out Patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Naadi (Vathakalappu)	20	100	20	100
2.	Sparisam	20	100	20	100
3.	Naa	10	50	10	50
4.	Niram	1	5	-	-
5.	Mozhi	-	-	-	-
6.	Vizhi	3	15	2	10
7.	Malam	18	90	10	50
8.	Moothiram	20	100	20	100

Out of 20 In Patients, 60% of cases were Vatha Pitha Naadi. 40% of cases were Pitha Vatha Naadi. Sparisam was affected in 100% of cases. Naa was affected in 50% of cases. Malam was affected in 90% of cases. Niram was affected in 5% of cases. Vizhi was affected in 50% of cases. Moothiram was affected in 100% of cases. In all 20 cases. Neerkuri and Neikuri were studied. Neerkuri was found to be normal in all cases. Neikuri showed that the oil dropped in to the urine spreaded like **"Aazhiyil Aravu"** (20%) and **"Aravil Aazhi"** (80%).

Out of 20 Out Patients, 70% of cases were Vatha Pitha Naadi. 30% of cases were Pitha Vatha Naadi. Sparisam was affected in 100% of cases. Naa was affected in 50% of cases and Malam was affected in 50% of cases. Vizhi was affected in 10% of cases. Moothriram was affected in 100% of cases. Neerkuri was found to be normal in all cases. Neikuri showed that the oil dropped in to the urine spreaded like **"Aazhiyil Aravu"** (30%) and **"Aravil Aazhi"** (70%).

19. Grading of Arthritis:

Table 19: Illustrates Grading of poly Arthritis

S. No.	Grade	In Patients (IP)		Out Patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	I	-	-	-	-
2.	II	12	60	14	70
3.	III	7	35	6	30
4.	IV	1	5	-	-

Grade I : No restriction of ability to perform normal activities.

Grade II : Moderate restriction but with an ability to perform most activities of daily activity.

Grade III : Marked restriction with an inability of perform most activities of daily living and occupation.

Grade IV : In capacitation with confinement to bed or wheel chair.

Out of 20 In Patients,

- ❖ 60% of cases belonged to Grade II
- ❖ 35% of cases belonged to Grade III and
- ❖ 5% of case belonged to Grade IV

Out of 20 Out Patients,

- ❖ 70% of cases belonged to Grade II and
- ❖ 30% of cases belonged to Grade III

Assessment of the Effect of Therapy :

The patients were treated for about 41days to 64 days with the trial medicines. At the end of the treatment the results were categorised as follows,

Good : Complete, Subsidence of Pain and Disappearance of Swelling.

Fair : Relief of pain, Reduction in Swelling and Increasing Range of Movements.

Poor : No Improvement.

20. Grading of Results:

Table 20: Illustrates Grading of Results

S. No.	Grade	In Patients (IP)		Out Patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Good	9	45	6	30
2.	Fair	10	50	11	55
3.	Poor	1	5	3	15

Out of 20 In Patients, 45% of cases showed good response. 50% of cases showed fair response. 5% of cases showed poor response.

Out of 20 Out Patients, 30% of cases showed good response. 55% of cases showed fair response. 15% of cases showed poor response.

21. Radio Graphic Findings

Table 1: Illustrates Radio graphic findings (IP)

S. No.	IP No.	X-Ray	Probable Diagnosis
1.	1999	Both Knee joints – Ap view	Bil OA
2.	2597	Both Knee joints – Ap view	Bil OA
3.	2241	Both Knee joints – Ap view	Bil OA
4.	2311	Both hands with wrist joints - Ap view	RA
5.	2255	Both Knee joints – Ap view	Bil OA
6.	2314	Both Knee joints – Ap view	Bil OA
7.	2236	Left Knee joints – Ap view	OA (left)
8.	2395	Both knee joints - Ap view	Bil OA.
9.	2383	Both Knee joints – Ap view	Bil OA
10.	2570	Both hands with wrist joints – Ap view	RA
11.	2659	Both Knee joints - Ap view	Bil OA
12.	2468	Both Knee joints – Ap view	Bil OA
13.	2442	Both hands with wrist joints – Ap view	RA
14.	2350	Both Knee joints – Ap view	Bil OA
15.	2348	Both Knee joints – Ap view	Bil OA
16.	2280	Both hands with wrist joints - Ap view	RA
17.	2101	Both Knee joints – Ap view	Bil OA
18.	2222	Both Knee joints – Ap view	Bil OA
19.	2313	Both hands with wrist joints - Ap view	RA
20.	2272	Both Knee joints – Ap view	Bil OA

Table 2: Illustrates Radio graphic findings (OP)

S. No.	OP No.	X-Ray	Probable Diagnosis
1.	48655	Both Knee joints – Ap view	Bil OA
2.	56769	Left Knee joints – Ap view	OA (Left)
3.	58848	Both Knee joints – Ap view	Bil OA
4.	48154	Both hands with wrist joint – Ap view	RA
5.	47399	Right Knee joints – Ap view	OA (Right)
6.	46525	Both Knee joint – Ap view	Bil OA
7.	48394	Both Knee joints – Ap view	Bil OA
8.	46553	Both Knee joints – Ap view	Bil OA
9.	48379	Both hands with wrist joints – Ap view	RA
10.	47680	Both Knee joints – Ap view	Bil OA
11.	58751	Left Knee joints – Ap view	OA (Left)
12.	52965	Both Knee joints – Ap view	Bil OA
13.	59515	Both Knee joints – Ap view	Bil OA
14.	60966	Both hands with wrist joints - Ap view	RA
15.	60319	Both Knee joints – Ap view	Bil OA
16.	60718	Both Knee Joint – Ap view	Bil OA
17.	58782	Both hands with wrist joints - Ap view	RA
18.	59537	Both Knee joints – AP View	Bil OA
19.	64116	Both Knee joints – Ap view	Bil OA
20.	46599	Both hands with wrist joints – Ap view	RA

DISCUSSION

Among 80 Vatha diseases, **Santhuvatham** is one of the Rheumatic conditions characterized by stiffness and inflammation of joints, body pain, lethargy, lassitude, along with pillor erectation of skin and salivary secretary defects. Particulary upper and lower extremities and their functions are affected, resulting inability to stand firmly. So Vatha diseases have received more attention and good prognosis in the field of Alternative medicine, especially in Siddha medicine.

Santhuvatham is correlated to inflammatory poly arthritic conditions, characteristically upper and lower extremities involvement.

Groups of inflammatory arthritis such as seronegative and seropositive Rheumatoid Arthritis and degenerative type of arthritis such as Osteo Arthritis cases also have above-mentioned clinical manifestations.

20 In Patients and 20 Outpatients were subjected on this study results can be discussed as follows.

Sex Distribution:

Among 20 In Patients and 20 Outpatients, 15 were males and 25 females. From this study the sex incidence was higher in females than in males, indicating Santhuvatham is predominant in females.

Age Distribution:

Among 20 In Patients, 10% of cases were in the age between 31-40 years. 5% of cases were between 41-50 years. 55% of cases were between 51-60 years. 30% of cases were above 60 years.

Among 20 Out Patients, 5% of cases between 21-30 years. 15% of cases between 31-40 years. 20% of cases between 41-50 years. 30% of cases between 51-60 years and 30% of cases were above 60 years.

The incidence of the disease was more predominant in 6^{th}, 5^{th} and 4^{th} decades. According to the literatures no age group is exempted for

Santhuvatham, but usual incidence of Rheumatoid Arthritis is during 4th and 5th decade. The clinical study also coincides with it. For Osteo Arthritis after 40 years.

Kalam:

Among 20 In Patients,

Pitha Kalam – 95%

Kapha Kalam – 5%

Among 20 Out Patients,

Vatha Kalam – 10%

Pitha Kalam – 75%

Kapha Kalam – 15%

According to this concept maximum numbers of cases were noted in Pitha Kalam, which is the time between 33 years & 4 months – 66 years & 8 months which coincides very well with that of modern concept of age i.e. 4th and 5th decades.

Socio – Economic Status:

20 In Patients and 18 Out Patients were belonged to poor class.

Poor patients were mostly affected because of physical and mental stress and poor resistance.

Paruvakalam:

Among 20 In Patients, 90% of cases were admitted in Kaar Kalam. 10% of cases were admitted in Muthuvenil Kalam.

Among 20 Out Patients, 45% of cases were treated in Kaar Kalam. 45% of cases were treated in Muthuvenil Kalam and 10% of cases were treated in Koothir Kalam.

According to siddha system, Koothir Kalam is a season for vatha diseases. The clinical trial coincides with it

Gunam:

Out of 20 In patients and 20 out patient all the cases had Rajotha Gunam

Thinai :

Among 20 In Patients and 20 Out Patients, all cases were admitted from Marutha Nilam.

Marutha Nilam is the area where the severity of the disease is less. But this incidence may be due to the alteration in the food habit and their activities.

Aetiology:

Among 20 In Patients, 15% of cases had a positive family history. 15% of cases had a positive previous history and rest of the persons affected by miscellaneous reasons.

Among 20 Out Patients, 25% of cases had a positive family history. 10% of cases had a positive previous history and rest of the persons affected by miscellaneous reasons.

Mode of Onset:

Among 20 In Patients, the Onset of the disease was acute in 10% and gradual in 90% of cases.

Among 20 Out Patients, the Onset of the disease was acute in 5% and gradual in 95% of cases.

The incidence was more in gradual onset as indicated on literatures.

The clinical trail coincides with it.

Clinical Manifestations:

Santhuvatham is present with stiffness of joints and inflammatory signs and symptoms like Pain, Swelling, Restriction of movements and extra articular manifestations.

Among 20 In Patients, cent percent of cases had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability. 90% of cases had body pain. 75% of cases had sleeplessness. 40% of cases had fever. 50% of cases had loss of appetite. 20% of cases had loss of weight and 90% of cases had constipation.

Among 20 Out Patients, cent percent of cases had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability. 95% of cases had body pain and 60% of cases had sleeplessness. 25% of cases had loss of appetite. 30% of cases had fever. 10% of cases had loss of weight and 50% of cases had constipation.

Joint pain was assessed by the words of the patients and was classified into mild, moderate and severe.

Among 20 In Patients, mild pain was observed in 25% of cases, moderate pain was observed in 45% of cases, severe pain was observed in 30% of cases.

Among 20 Out Patients, mild pain was observed in 20% of cases, moderate pain was observed in 45% of cases, severe pain was observed in 35% of cases.

Swellings of the joints were noticed in all cases. Swellings of the joints were measured by means of a non elastic measurable tape. Areas of maximum level of swelling around the joints were measured both before and after the treatment. The joints subjected to measurements

were both knee joints, ankle joints, wrist joints, proximal inter phalangeal joints of index fingers, middle fingers and little fingers.

The degree of joints swelling was observed with respect to the constitution (thin, obese, medium built) of the body.

Among 20 In Patients, mild swelling was measured in 20% cases, moderate swelling was measured in 60% of cases and severe swelling was measured in 20% of cases.

Among 20 Out Patients, mild swelling was measured in 20% of cases, moderate swelling was measured in 40% of cases and severe swelling was measured in 40% of cases.

A measurement taken after treatment reveals that 80% of cases under regular treatment had marked reduction in swelling. 15% of cases had mild reduction and 5% showed no signs of in improvement.

Almost all the patients experienced early morning stiffness, ranging approximately from 30 minutes to 4 hours. After treatment, it gradually came down to 20-30 minutes.

Restricted movements or decreased range of movements were seen in 100% of cases. Since facilities are inadequate, (Gonio meter) restricted movements of patients were assessed by asking the patients to move the joint in a particular direction. When the active movements of the joint were impossible, movements were considered as restricted or decreased range of motion.

Improvement was also assessed by the gradual reduction of time taken to walk a distance of about 100 feet after treatment. After treatment with trial medicines along with physiotherapy, in most of the cases increased range of movement was observed.

Incidence of Individual Joint Involvement:

Among 20 In Patients, Distal interphalangeal joint, proximal interphalangeal joint, metacarpo phalangeal joints, wrist joint were involved in 25% of cases. Ankle joint and metatarsophalangeal joints were involved in 15% of cases. Elbow joint was involved in 5% of cases. Knee joint was involved in cent percent of cases.

Among 20 Out Patients, Distal interphalangeal joint, proximal interphalangeal joint, metacarpo phalangeal joints, wrist joint were involved in 25% of cases. Ankle joint and metatarsophalangeal joints were involved in 25% of cases. Knee joint was involved in cent percent of cases.

Deformities of Joints:

Among 20 In Patients, 15% of cases had deformity in the inter phalangeal joints, metacarpo phalangeal joints. 45% of cases had deformity in knee joints.

Among 20 Out Patients, 10% of cases had deformity in the inter phalangeal joints, metacarpo phalangeal joints. 40% of cases had deformity in knee joints.

Elicitation of Extra Articular Manifestations:

Apart from the symptoms told by the patient, certain signs were also elicited. These included examination of the liver, spleen for enlargement, presence of subcutaneous nodules, respiratory symptoms, cardiovascular symptoms, muscle wasting, reflexes, ophthalmic manifestations etc were noted.

Among 20 In Patients, 5% of cases had subcutaneous nodules, 20% of cases had muscle wasting.

Among 20 Out Patients, 10% of cases had subcutaneous nodules 25% of cases had muscle wasting.

Hepatomegaly, splenomegaly were not present in any case. Likewise, Cardiovascular symptoms were not present.

Uyirthathukkal:

Uyirthathukkal constitute three vital humours mentioned in siddha system, namely Vatha, Pitha and Kapha. Disturbances in uyirthathukkal leads to disease entities and are discussed here.

Disturbances in Vatham:

Among 20 In Patients, Abanan was affected in 90% of cases produces constipation. Viyanan was affected in cent percent of cases produces pain and restriction of movements of the joints. Samanan was affected in 100% of cases produces loss of appetite, indigestion and it neutralizes other vayus. Koorman was affected in 15% of cases produces blurring of vision. Kirukaran was affected in 40% of cases produces loss of appetite, excessive salivation and dryness of tongue. Devathathan was affected in 75% of cases produces insomnia.

Among 20 Out Patients, Abanan was affected in 50% of cases. Viyanan was affected in 100% of cases. Samanan was affected in 100% of cases. Koorman and Kirukaran were affected in 10% of cases. Devathathan was affected in 50% of cases. Uthanan, Nagan and Dhananjeyan were found to be normal in both In Patients and Out Patients.

Disturbances in Pitham:

Among 20 In Patients, Anarpitham was affected in 50% of cases produces loss of appetite and indigestion. Ranjagaitham was affected in 50% of cases produces deceased Hb percentage. Prasakapitham was affected in 10% of cases produces pallor of the skin. Alosakapitham was affected in 15% of cases produces blurring of vision. Sathagapitham was affected in cent percent of cases produces unable to carryout their regular works properly.

Among 20 Out Patient, Anarpitham was affected in 25% of cases. Ranjagapitham was affected in 50% of cases. Alosakapitham was affected in 10% of cases. Sathagapitham was affected in cent percent of cases. Prasakapitham was found to be normal in all Outpatients.

Disturbances in Kapham:

Among 20 In Patients, Avalambagam was affected in cent percent of cases because it is basic for all other kaphas (Kilethagam, Pothagam, Tharpagam and Santhegam). Kilethagam was affected in 50% of cases produces loss of appetite and indigestion. Santhegam was affected in cent percent of cases produces joint pain, swelling and restriction of movements.

Among 20 Out Patients, Avalambagam and Santhegam were affected in cent percent of cases. Kilethagam was affected in 25% of cases. Pothagam and Tharpagam were found to be normal in both In Patients and Out Patients.

Udal Thathukkal or Udal Kattugal:

Among 20 In Patients and 20 Out patients, Saram was affected in all cases and produces easy fatiguability. Senneer was affected in all cases and produces decreased Hb percentage and pain. Oohn was affected in all cases which produced muscle wasting in thenar and hypothenar muscles and pain. Kozhuppu was affected in all cases which showed emaciation. Enbu was affected in all cases which showed joint pain, swelling and restricted movements.

Moolai, Sukkilam and suronitham were found to be normal in both In Patients and Out Patients.

Envagai Thervugal:

Envagai thervugal is considered to be the very vital observation. This constitute Naadi, Sparisam, Naa, Niram, Mozhi, Vizhi, Malam and Moothiram.

Among 20 In Patients and 20 Out Patients,

60% of In Patients and 70% of Out Patients showed Vatha Pitha Naadi. 40% of In Patients and 30% of Out Patients showed Pitha Vatha Naadi.

Sparisam was affected in all In Patients and Out Patients produced warmthness over the inflammed joints.

Naa was affected in 50% of In Patients and 50% of Out Patients. Coated tongue due to constipation and pale due to Anaemia.

Niram was affected in 5% of In Patients and none of Out Patients which showed pallor of the skin.

Mozhi was normal in both In Patients and Out Patients.

Vizhi was affected in 15% of In Patients and 10% of Out Patients which showed blurring of vision.

Malam was affected in 90% of In Patients and 50% of Out Patients. Constipation was present in those cases.

Moothiram was affected in cent percent of In Patients and Out Patients which altered Neikuri.

Neerkuri and Neikuri were noticed in all the cases.

Neerkuri was found to be normal, straw in colour, normal frequency, Smell and froth.

Neikuri showed that the oil dropped into the urine was spreading like **"Aravil Aazhi"** (Vatha Pitha Neer) and **"Aazhiyil Aravu"** (Pitha Vatha Neer).

Grading of arthritis Patients:

Grading of arthritis was useful to assess the gravity of the disease. Four grades are as follows :

Grade I : No restriction of ability to perform normal activities.

Grade II : Moderate restriction but with an ability to perform most activities of daily activity.

Grade III : Marked restriction with an inability to perform most activities of daily living and occupation :

Grade IV : Incapacitation with confinement to bed or wheel chair

Among 20 In Patients and 20 Out Patients

- No cases belonged to grade I
- 60% of In Patients and 70% of Out Patients belonged to Grade II
- 35% of In Patients and 30% of Out Patients belonged to Grade III
- 5% of In Patients belonged to Grade IV and no Out Patients belonged to Grade IV

Investigations:

Routine examination of blood, urine and stools were done. Examination of urine and stools showed no abnormalities.

ESR (Erythrocyte Sedimentation Rate) is increased in 95% of In Patients and 90% of Out Patients.

50% of In Patients and 50% of Out Patients had decreased Hb%. Blood sugar, blood urea, serum cholesterol were also done in bio-chemistry department, Government siddha medical college, Palayamkottai. The values were found to be normal in all cases.

Affordable patients were asked to do the investigations privately at their own cost and reports were recorded.

The patients were also subjected to radiological investigations.

X-ray of both hands with wrist joints (Antero posterior view):

Were taken to 5 In Patients and 5 Out Patients. 10 patients had gross abnormalities (gross osteoporosis), with reduction in interphalangeal joint space, Synovial thickening etc and in one case ankylosis also seen. These patients had been suffering from this disease for a long period and one case had soft tissue swelling over interphalangeal joint.

X-ray of both knee joints:

Antero posterior view was taken for 15 In patients and 15 Out Patients. The reports revealed gross osteoporosis with reduction of joint space and sclerosis.

Management:

"விரேசனத்தால் வாதம் தாழும்"

Vatha disease can be brought down by Viraesanam (Laxative and purgative) So 10gm of Nilavagai chooranam was given with hot water at bed time.

Meganathi Kulligai and **Arrkkathy Thylam** were the specific medicines selected for the disease santhuvatham. Megananthi Kulligai 1pill was given three times a day with honey internally and 30ml of Arrkkathy Thylam was given externally. The patients were advised to apply over the areas of pain three times a day. Gentle massage was also given. No adverse reactions of drugs were observed.

Hot water fermentation was advised to all the patients after the application of oil, because hot water fermentation increases the blood supply to that affected area and relieves the pain.

Bed rest was advised for all the patients. After inflammation was subsided the patients were advised to do some exercise to increase the range of movements, to prevent disuse atropy and to prevent deformities.

Assessment of the Effects of Management:

All the 20 In Patients and 20 Out Patients were treated with Meganathi Kulligai internally and Arrkkathy Thylam externally. Physiotherapy was also advised. The results were assessed on the basis of improvement of the range of movements, decrease of pain and inflammation and a sense of well being. The duration of treatment was 41-64 days in average.

At the end of the treatment,

- 45% of In Patients showed good results
- 50% of In Patients showed fair results
- 5% of In Patients showed poor results
- 30% of Out Patients showed good results
- 55% of Out Patients showed fair results
- 15% of Out Patients showed poor results

15% of poor results may be due to the Out Patients were not strictly followed diet restriction.

After discharge the In Patients were advised to attend the post graduate Out Patients ward for further follow-up.

During the treatment, the diet restriction was strictly followed. Patients were instructed to take warm bath and to avoid exposure to chill weather.

SUMMARY

Santhuvatham is a connective tissue disorder with a chronic course, unless early diagnosis and proper management, this condition leads to deformities of involved joints associated with systemic disturbances.

The modern treatment of poly Arthritis with Analgesics and Anti inflammatory drugs has not proved any permanent cure. So poly Arthritis has received an international attention for finding out a new siddha medicines **(Meganathi Kulligai, Arrkkathy Thylam)** were tried clinically in this dissertation work.

In this study of 40 patients (20 Inpatients and 20 Outpatients) of both sexes were selected. Females are predominant than males. This disease usually occurs betweeen third and fifth decades.

The incidence of this disease was higher in winter seasons and positive family history and previous illness.

All Inpatients and 90% of Outpatients belonging to poor socio economic status. 10% of Outpatients belonging to middle class. The onset of the disease in gradual in 90% of Inpatients and 95% of Outpatients and acute in10% of Inpatients and 5% of Outpatients.

Articular manifestations of Santhu vatham were cent percent present in all cases. Constipation and insomnia were also common in this disease.

90% of Inpatients and 50% of Outpatients were suffered from constipation. 75% of Inpatients and 50% of Outpatients were suffered from insomnia.

In Uyir Thathukkal, Viyanan, Samanan, Sathagam, Avalambagam and santhegam were affected in cent percent of Inpatients and Outpatients. Abanan was affected in 90% of Inpatients and 50% of Outpatients. Korrman was affected in 15% of Inpatients and 10% of Outpatients. Kirukaran was affected in 40% Inpatients and 10% of Outpatients. Devathathan was affected in 75% of Inpatients and 50% of Outpatients. Anarpitham was affected in 50% of Inpatients and 25% of Outpatients. Ranjaga pitham was affected in 50% of Inpatients and 50% of Outpatients. Prasakapitham was affected in 10% of Inpatients and none of Outpatients. Alosakapitham was affected in 15% of Inpatients and 10% of Outpatients. Kilethagam was affected in 40% of Inpatients and 10% of Outpatients.

In udal kattugal, Saram, Senneer, Oohn, Kozhuppu and Enbu were affected in all Inpatients and all Outpatients.

In Envagai Thervugal, Vatha Pitha Naadi was present in 60% of Inpatients and 70% of Outpatients. Pitha Vatha Naadi was present in 40% of Inpatients and 30% of Outpatients. Sparisam and Moothiram were affected in all Inpatients and Outpatients. Naa was affected in 50% of Inpatients and 50% of Outpatients. Niram was affected in 5% of

Inpatients and none of Outpatients. Vizhi was affected in 15% of Inpatients and 10% of Outpatients. Malam was affected in 90% of Inpatients and 50% of Outpatients.

Routine blood, urine and stool examinations and Radiological evaluation were also considered for diagnosis and to follow the progress of the patients.

The efficacies of the trial medicines were studied and observed during the period of this study.

Clinically there were marked reduction of extra articular symptoms such as defective salivary secretion, epigastric pain, anorexia, chillness, constipation, burning micturition etc, and marked improvement of articular manifestation present in those who came in early stage of disease. Clinically there were marked reduction of spasm, restricted movement and clinical weakness of limbs, along with sense of well being and decreased ESR were noted.

Clinically the medicines were free from side effects. Pharmacological studies showed that **Meganathi Kulligai had significant Analgesic, Anti inflammatory and Anti pyretic activities Arrkkathy thylam showed significant Anti inflammatory action also**.

I have a plan for further studies. I would like to have a deeper knowledge on this disease. I intend to have more intensive knowledge on the dissertation subject by doing Ph.D.

CONCLUSION

Preclinical studies showed significant activity and safety of the trial drug. Treatment of SANTHU VATHAM patients with the trial drugs showed remarkable improvement in reducing the pain and inflammation of joints. No untoward effects were reported during the treatment period.

Further followup with trial medicines showed improvement in generalized well being as they could carry out their day-to-day activities better than earlier.

Because of the encouraging results both preclinically and clinically, it is concluded that treatment of SANTHU VATHAM patients with the trial drugs,Meganathi kulligai, Arrkkathy thylam will be very effective in the point of efficacy and safety.

ANNEXURE - I

PROPERTIES OF THE TRIAL DRUG

இலிங்கம்:

Synonyms	: இங்குலிகம், கடைவன்னிகர்ப்பம், மணிராகம், சமரசம், வன்னி
Common Name	: Cinnabar
Chemical Name	: Red sulphide of Mercury
Veeriyam	: Veppam
Action	: Alterative

Gunam:

"சாதிலிங் கத்தின் றன்மை சாற்றிடிற் குணமே யாதி
சூதரே ராகுங் குட்டஞ் சூலைதீக் குன்மங் குத்து
வாதமே வலி சுரங்கள் வளர்சன்னி பாண்டு வாயு
ஓதிடுங் கோழை யீழை யுரை தரு மிவையே யாதி."

- பதார்த்த குண சூடாமணி பாடல் எண். 291

இலிங்கம் குட்டம், சூலை, குன்மம், வாதம், வலி, சுரம், சன்னி, பாண்டு முதலிய பிணிகளை நீக்கும்.

வெங்காரம்

English Name	-	Sodium biborate, Borax
Taste	-	Sweet, astringent
Thanmai	-	Veppam
Constituents	-	It is composed of boric acid and soda.
Action	-	Diuretic, Astringent, Local Sedative.

குணம் :

தோல் நோய், எண்வகை குன்மம், நமைச்சல், குருதிமூலம், சந்தி தீரும்.

இந்துப்பு

Synonyms	: சிந்தூரம், மதிகூர்மை, மதியுப்பு, சைந்தவம்,
English Name	: Rock Salt.
Action	: Laxative, Carminative, Stomachic, Digestive.

குணம்:

எண்வித குன்மம், திரிதோஷம், வாதகடுப்பு, சூலை தீரும்.

பெருங்காயம்:

Synonyms	-	இங்கு இரணம், இராமடம், கந்தி, சந்துநாசம். பூதநாசம். வல்லீகம்.
Botanical Name	-	Ferula Asafoetida
English Name	-	Asafoetida
Family	-	Apiaceae
Part used	-	Aromatic gum resin.
Suvai	-	Kaippu, Karakaraappu.
Thanmai	-	Veppam
Pirivu	-	Kaarppu
Constituents	-	Ferulic acid, Malic Acidic, Umbeliferone.
Action	-	Stimulant, Anti Spasmodic, Carminative, Laxative, Anthelminitic

வசம்பு:

Synonyms	-	பேர் சொல்லா மருந்து, சுடுவான், உரைப்பான், பிள்ளை மருந்து. சந்துநாசம், பூதநாசம், வேணி.
Botanical Name	-	Acorus Calamus
English Name	-	Sweet Flag
Family	-	Araceae
Part used	-	Root.
Suvai	-	Karrppu.
Thanmai	-	Veppam
Pirivu	-	Karrppu
Constituents	-	Calamen, Acorin
Action	-	Stimulant, Stomachic, Carminative,

குணம் :

எல்லா வகை நஞ்சுகள், முப்பிணி, இருமல், ஈரல் நோய்கள் தீரும்.

சிவதை :

Botanical Name	-	Operculina turpethum
English Name	-	Turpeth Root
Family	-	Convolvulaceae
Part used	-	Root.
Suvai	-	Kaippu.
Thanmai	-	Veppam
Pirivu	-	Kaarppu
Constituents	-	Turpethin Glucoside
Action	-	Purgative

குணம் :

வயிற்றில் உண்டாகும் கேடுகள், பித்த வாத நோய்கள் உள்மூலம் தீரும்.

வாய்விளங்கம் :

Synonyms	-	**கேரளம், வர்னைண.**
Botanical Name	-	Embelica ribes.
Family	-	Myrsinanceae
Part used	-	Seeds.
Suvai	-	Kaippu.
Thanmai	-	Veppam
Pirivu	-	Kaarppu
Constituents	-	Embelic acid, Tanin, Christembine
Action	-	Anthelmintic, Carminative, stomachic, stiumulant,

குணம் :

பாண்டு, குன்மம், வாய்வு, மிகு பரும நோய் தீரும். வளிக்குற்றத்தை தன்னிலைப்படுத்தும்.

காட்டாமணக்கு :

Synonyms	-	**கடலாமணக்கு, ஆதளை,**
Botanical Name	-	Jatropha Curcas
English Name	-	English Physic nut
Family	-	Euphorbiace
Part used	-	Root.
Suvai	-	Thuvarppu
Thanmai	-	Veppam
Pirivu	-	Kaarppu
Action	-	Galactagogue, Hoemostatic, Vermifuge.

குணம் :

கபவாத சூலை, தலைநோய், உள்மூலம், வெட்டை தீரும்.

சுக்கு:

English Name	- Dried Ginger
Botanical Name	- Zingiber officinale
Family	- Zingiberaceae
Part used	- Dried and scraped rhizome
Suvai	- Acrid
Thanmai	- Veppam
Pirivu	- Kaarppu
Constituents	- Camphene, Phellandrene, Zingiberine, Cineol, Gingerol, Oleo resin Gingerin.
Action	- Stimulant, Stomachic, Carminative

Gunam:

சுக்கினால் சூலை, கபம், வாதவீக்கம், நீர்க்கோவை, மந்தம், குன்மம், இருமல், சுவாசகாசம், தோடம் முதலியன நீங்கும்.

ஓமம்:

Syononmys	- **அசமோதம், தீப்பியம்**
English Name	- Bishops weed
Botanical Name	- Carum copticum, Benth
Family	- Umbelliferae
Part used	- Seeds
Constituents	- Essential oil, thymol
Action	- Stomachic, Antispasmodic, Carminative, Antiseptic, Stimulant, Tonic, Sialogogue.

Gunam:

இதனால் வலி, வாயு, இரைப்பு, மந்தம், கழிச்சல் குணமாகும்.

நொச்சி:

Botanical Name	- Vitex negundo
Family	- Verbenaceae
Part used	- Leaves
Suvai	- Bitter, Astringent, Acrid
Thanmai	- Veppam
Pirivu	- Acrid
Constituents	- Essential oil, resin
Action	- Leaves are externally Anti parasitic.

Gunam:

Leaves are very efficacious in dispelling inflammatory swellings of joints from acute rheumatism.

புளி:

Botanical Name	- Tamarindus indica
Family	- Caesalpiniaceae
Part used	- Leaves
Suvai	-Pulippu

Constituents - Tartaric acid

Action - Carminative,Laxative,stimulant

குணம்:

இலையை நசுக்கி நீர் விட்டுக் கொதிக்க வைத்து கீல் வாயு வீக்கங்களுக்கு பற்றிட வலி தணியும்.

எருக்கம்பால்:

"எருக்கம்பாற் கட்டிகளை யேகரைக்கும் வாய்வைத்
திருக்கறவே கொன்றுவிடுந் நீராச் - செருக்கான
சந்நி வலிதீர்க்குஞ் சார்ந்தபல சிந்தூரம்
முன்ன முடிக்குமென வோது."

கீல்வாதம், நரித்தலைவாதம், ஐவகை வலி, வலி நோய்கள் தீரும். கட்டிகள் கரையும்.

5. வெள்ளாட்டுப்பால்

பொதுகுணம் :

"வெள்ளாட்டுப் பாலுக்கு மேவியநற் நீபனமாற்
தள்ளாடு வாத பித்தஞ் சாந்தமாம் - உள்ளிரைப்புச்
சீதமதி சாரஞ் சிலேஷ்ம மாறும் புண்ணாறும்
வாத சிலேஷ்ம மும்போ மாய்ந்து."

குணம் :

வாத பித்த தொந்தம், சுவாசகாசம், கபதோஷம், வாதத்தினால் உண்டாகிய வீக்கம் தீரும்.

6. நல்லெண்ணெய் :

Botanical Name - Sesamum indicum

Family - Pedaliaceae

Parts used - Seeds

Suvai - Sweat

Thanmai - Veppam

Pirivu - Sweet

Constituents:

Oil contains 70% of liquid fats consisting of the glycerides of oleic, linoleic acids and 12-14% of solid fats, stearin, palmitin and myristin, sesamin and sesamol.

Action:

Seeds are Laxative, Emollient and Demulcent, Diuretic, Nutritive.

Gunam:

எள்நெய்யால் பித்த நோய்கள், இளைப்பு, கண்நோய்கள், தலைவலி முதலியன நீங்கும். காந்தி, கண்ஒளி உண்டாகும்.

ANNEXURE II

BIO – CHEMICAL ANALYSIS OF MEGANATHI KULLIGAI

PREPARATION OF THE EXTRACT:

5gms of Chooranam was weighed accurately and placed in a 50ml clean beaker. Then 50ml distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it is made up to 100ml with distilled water. This fluid is taken for analysis

Qualitative Analysis

S. No.	Experiment	Observation	Inference
1.	**TEST FOR CALCIUM** 2ml of the above prepared extract is taken in a clean test tube. 2 ml of 4% Ammonium Oxalate solution is added to it.	No white precipitate is formed.	Absence of Calcium.
2.	**TEST FOR SULPHATE** 2ml of the extract is added to 5% Barium Chloride solution.	No White precipitate is formed.	Absence of Sulphate.
3.	**TEST FOR CHLORIDE** The extract is treated with Silver Nitrate solution.	A white precipitate is formed.	Indicates the presence of Chloride.
4.	**TEST FOR CARBONATE** The substance is treated with Concentrated HCl.	No brisk effervessence is formed.	Absence of Carbonate.

5.	**TEST FOR Starch** The extract is added with Weak iodine solution.	Blue colour is formed	Indicates the presence of starch
6.	**TEST FOR IRON- FERRIC** The extract is treated with concentrated Glacial Acetic Acid and Potassium Ferro Cyanide.	No blue colour is formed.	Absence of Ferric Iron.
7.	**TEST OF IRON - FERROUS** The extract is treated with concentrated Nitric Acid and Ammonium Thio Cyanate.	Blood red colour is formed.	Indicates the presence of Ferrous Iron.
8.	**TEST FOR PHOSPHATE** The extract is treated with Ammonium Molybdate and concentrated Nitric Acid.	Yellow precipitate is formed.	Indicates the presence of Phosphate.
9.	**TEST FOR ALBUMIN** The extract is treated with Esbach's reagent	No yellow precipitate is formed.	Absence of Albumin.
10.	**TEST FOR TANNIC ACID** The extract is treated with Ferric Cloride	No blue black precipitate is formed.	Absence of Tannic Acid.
11.	**TEST FOR UNSATURATION** To the extract Potassium Permanganate solution is added.	It doesnot get decolourised.	Absence of Unsaturated Compound.

12.	**TEST FOR THE REDUCING SUGAR** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts. And added 8-10 drops of the extract and again boil it for 2 mts.	No colour change occurs.	Absence of Reducing Sugar.
13.	**TEST FOR AMINO ACID:** One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninhydrin is sprayed over the same and dried well.	No Violet colour is formed.	Absence of Amino Acid

Inference:

Bio chemical analysis of meganathi kulligai indicates the presence of chloride, starch, ferrous iron, phosphate.

ANNEXURE III

PHARMACOLOGICAL ANALYSIS

ANALGESIC STUDY ON MEGANATHI KULLIGAI

(In Albino rats by Hot Water Bath Method)

Aim:

To study the analgesic effect of Meganathi Kulligai

Preparation of the test medicine:

130mg of Meganathi Kulligai was powdered and it was measured accurately and dissolved in 10ml of Honey. A dose of 1ml was given to each rat. This 1ml contains 20mg of test medicine.

Procedure:

Three groups of healthy albino rats of both sexes were selected, each group having 3 rats, weighing between 100 to 150gm. The hot water bath was maintained at a temperature of 55°C.

The tail was dipped into the bath, and the time taken for each rat to remove its tail from the hot water bath was noted. The rat which took more than 5sec for removal of its tail from hot water bath was excluded from the experiment.

First group was kept as control by giving distilled water of 2ml per 100mg of body weight.

To the Second group paracetamol 20mg per 100gm of body weight was given and was kept as standard.

To the third group test medicine was given.

30 minutes after the administration of medicines, the tail of each rat was dipped into hot water bath one by one. The time taken for each rat to remove its tail was noted. The whole experiment was repeated after 30 minutes.

The results of control, standard and test medicine groups were tabulated and compared.

Study of Analgesic Action by Hot water bath method using Meganathi Kulligai.

Serial No.	Name of Drug / Groups	Dose /100 gram body weight	Initial Reading (Seconds)	After Drug administration			Mean Difference
				½ hr (Average)	1 hr (Average)	1½ (Average)	
1	Control (Water)	2ml	2.5 sec	2.5 sec	2.5 sec	2.5 sec	2.5 sec
2	Standard (Ibuprofen)	20mg	2.5 sec	3.5 sec	4.5 sec	6.5 sec	6.5 sec
3	Meganathy Kulligai	20mg	2.5 sec	3.0 sec	4.5 sec	6.0 sec	6.0 sec

Inference:

It is observed that meganathi kulligai has got Significant Analgesic Action.

ANTI-PYRETIC STUDY ON MEGANATHI KULLIGAI

(By Yeast induced Method)

Aim:

To study the anti-pyretic activity of the Meganathi Kulligai.

Preparation of the test Medicine

130mg of Meganathi Kulligai was powdered and it was measured accurately and dissolved in 10ml of Honey. A dose of 1ml was given to each rat. This 1ml contains 20mg of test medicine.

Procedure:

Group of Six Albino rats were selected and divided equally into groups. All the rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml/100 gm of the body weight. 10 hours later one group of animals were given the test medicine by gastric tube at a dose of 20mg/ml and the second group received only distilled water at a dose of 1ml.

The mean rectal temperature for the groups were recroded at 0 hour, 1 ½ hours, 3 hours and 4 ½ hours after the drug administration. The difference between the mean temperature of the control group and that of the other group is measured.

Study of Anti-Pyretic Action by Yeast Induced Method using the drug, Meganathi Kulligai

S. No.	Name of Drug / Groups	Dose / 100 gram body weight	Initial Temperature in centigrade	After Drug administration			Mean temperature
				1½ hr	3hr	4½ hr	
1.	Control (Water)	1ml	36.0 37.0	36.0 37.0	36.0 38.0	37.0 39.0	38.0
2.	Standard (Paracetamol)	20mg	37.0 38.0	37.0 37.0	36.5 36.5	35.0 34.0	34.5
3.	Meganathi kulligai	20mg	38.0 38.0	37.5 37.5	36.5 36.5	35.5 35.5	35.5

Inference:

The test drug meganathi kulligai has Significant Anti-Pyretic Action.

ACUTE ANTI-INFLAMMATORY STUDY ON MEGANATHI KULLIGAI

(By Hind paw Method in Albino Rats)

Aim:

To study the Acute Anti-inflammatory effect of Meganathi Kulligai

Preparation of the test medicine:

130mg of Meganathi Kulligai was powdered and it was measured accurately and dissolved in 10ml of Honey. A dose of 1ml was given to each rat. This 1ml contains 20mg of test medicine.

Procedure:

Nine healthy albino rats weighing 100 – 150 gm were taken and divided into three groups, each consisting of 3 rats.

First group was kept as control by giving distilled water of 2ml / 100gm of body weight. The second group was given Ibuprofen at dose of 20mg / 100gm of body weight. The third group received the trial medicine, Meganathi Kulligai at a dose of 20mg / 100gm of body weight.

Before the administration of trial medicine, the hind – paw volume of all the rats were measured. This was done by dipping the hind paw up to tibio tarsal junction, into a mercury plethysmograph. While dipping the hind paw, pull the syringe piston so that the level of mercury in the center small tube was made to coincide with the red marking and the reading was noted from the plethysmograph.

Soon after the measurement, the medicines were administered orally. One hour later, a subcutaneous injection of 0.1ml of 1% (w / v) carrageenin in water was made into the plantar surface of both hind paw of each rat.

Three hours after carrageenin injection, the hind paw volume was measured once again. The difference between the initial and final volume was calculated and compared.

The method is more suitable for studying the Anti – inflammatory activity in acute inflammation. The values are given in the table.

Study of Acute Anti–inflammatory effect by Hind-paw method using Meganathi Kulligai

Serial No.	Name of Drug/ Groups	Dose /100 gram body weight	Initial Reading average	Final reading average	Mean difference	Inflammation (Percentage)	Inhibition (Percentage)
1	Control (Water)	2ml	0.55	1.4	0.85	100	-
2	Standard (Ibuprofen)	20mg	0.55	0.85	0.3	35.2	64.8
3	Meganathi Kulligai	20mg	0.7	0.95	0.25	29.4	70.6

Inference:

It is observed that Meganathi Kulligai has got Significant Acute Anti-inflammatory Action.

CHRONIC ANTI-INFLAMMATORY STUDY ON MEGANATHI KULLIGAI

(Cotton pellet Granuloma Method)

Aim:

To study the chronic anti-inflammatory activity of Meganathi Kulligai in rats by cotton pellet implantation (Granuloma) method.

Preparation of the test medicine:

130mg of Meganathi Kulligai was powdered and it was measured accurately and dissolved in 10ml of Honey. A dose of 1ml was given to each rat. This 1ml contains 20mg of test medicine.

Procedure:

Cotton pellets each weighing 10mg was taken and sterilized in an autoclave for about one hour under 15 pounds atmospheric pressure. 9 albino rats weighing between 150 to 200mg were selected and were divided into 3 groups each containing 3 rats. Each rat was anaesthetized with ether and cotton pellets were implanted subcutaneously into the groin, two on each side.

From the day of implantation, one group of animals received meganathi kulligai at a dose of 20mg / 100gm of body weight. The standard group of animals received Ibuprofen at a dose of 20mg / 100gm body weight. The control group of animals received 2ml of distilled water.

On the eighth day the rats were sacrificed and the pellets were removed and weighed. Then they were put in an incubator at 60°C - 80°C and then the weight of the granulation tissue was determined separately.

Study of Chronic Anti-inflammatory effect by cotton pellet method using Meganathi Kulligai

S. No.	Name of Drug/ Groups	Dose /100 gram body weight	Pellet weight	Pellet weight of the Granuloma of drugs	Inflammation (Percentage)	Inhibition (Percentage)
1	Control (Water)	2ml	10mg	250mg	100	-
2	Standard (Ibuprofen)	20mg	10mg	55mg	22	78
3	Meganathi kulligai	20mg	10mg	100mg	40	60

Inference:

It is observed that Meganathi Kulligai has Significant Chronic Anti-inflammatory action.

ACUTE ANTI-INFLAMMATORY STUDY ON ARRKKATHY THYLAM

(By Hind-paw Method in Albino Rats)

Aim:

To study the acute anti-inflammatory study on Arrkkathy Thylam by hind paw method in albino rats.

Procedure:

Six albino rats weighing between 100 – 150 gm were selected and divided into two groups each containing three rats. To the first group distilled water was given and kept as a control. Before the application of the trial medicine, the hind paw volume of all the rats were measured. This was done by dipping the hind-paw up to the tibio-tarsal junction in mercury plethysmograph.

Subcutaneous injection of 0.1 ml of 1% carrogenin (w/v) in water was made into plantar surface of both the hind paw of each rat. To the test group, Arrkkathy thyllam was applied topically and frequently over the inflammed surface in a thin layer. To the control group, no drug was applied over the inflammed surface. One and half an hour after injection, the hind paw volume was measured once again. The difference between the initial and final volume shows the amount of inflammation. Taking

the volume in the control group as 100% of inflammation, the anti-inflammatory effect of the group is calculated.

Study of Acute Anti-Inflammatory effect by Hind paw Method using Arrkkathy Thylam

S. No.	Name of Drug/ Groups	Dose /100 gram body weight	Initial Reading average	Final reading average	Mean difference	Inflammation (Percentage)	Inhibition (Percentage)
1	Control (Water)	2ml	0.55	1.4	0.85	100	-
2	Standard (Ibuprofen)	20mg	0.55	0.85	0.3	35.2	64.8
3	Arrkkathy Thylam	External	0.9	1.21	0.31	36.4	63.6

Inference:

From the above experiment it is concluded that Arrkkathy Thylam has got Significant Acute Anti-inflammatory Action.

CASE – SHEET PROFORMA FOR " SANTHU VATHAM"

Department of Post Graduate – Maruthuavam (Pothu)

Government Siddha Medical College & Hospital

Palayamkottai.

Ward	:	Nationality	:
I. P. No	:	Religion	:
Bed. No	:	Date of Admission	:
Name	:		
Age (Years)	: ☐☐	Date of Discharge	:
Gender	: ☐M ☐F	Result	:
Occupation	:	Diagnosis	:
Income	:	Medical officer	:
Address	: …….....		
	……		
	……		

Complaints & Duration:

……

……..……

……..

History of Present illness:

……

……..……

……

Past history: ……

Family History :

……..

Social Status: low ☐ Middle ☐ Upper ☐

Habits:		**Yes**	**No**	
Smoker	:	☐	☐	_____
Alcoholic	:	☐	☐	_____
Tobacco chewer	:	☐	☐	_____
Betel nut chewer	:	☐	☐	_____
Food habits	:	V ☐	M ☐	_____

GENERAL EXAMINATION:

Consciousness	:	
Nourishment	:	
Body temperature(^{0}F)	:	☐☐☐
Blood pressure (mmHg)	:	☐☐☐ / ☐☐☐
Pulse rate/min	:	☐☐☐
Respiratory rate/min	:	☐☐☐

	Yes	**No**	
Anaemia	☐	☐	_____
Jaundice	☐	☐	_____
Cyanosis	☐	☐	_____
Clubbing	☐	☐	_____
Pedal oedema	☐	☐	_____
Generalised lymphadenopathy	☐	☐	_____
Engorged veins	☐	☐	_____
JVP ↑	☐	☐	_____

IN SIDDHA ASPECTS

NILAM:

Kurinji ☐ Mullai ☐ Marutham ☐

Neithal ☐ Paalai ☐

KAALA IYALBU:

Kaarkaalam ☐ KoothirKaalam ☐ Munpani ☐

Pinpani ☐ Ilavenir ☐ Mudhuvenir ☐

MUKKUNAM

Sathuvam ☐ Rajotham ☐ Thamokunam ☐

THEGI

Vatham ☐ Pitham ☐ Kapham ☐ Thontham ☐

IYMPORIGAL / IYMPULANGAL:

	1. Normal	**2. Affected**	
Mei	☐	☐	_____
Vaai	☐	☐	_____
Kan	☐	☐	_____
Mookku	☐	☐	_____
Sevi	☐	☐	_____

KANMENTHIRIYANGAL / KANMAVIDAYANGAL:

	Normal	**Affected**	
Kai	☐	☐	_____
Kaal	☐	☐	_____
Vaai	☐	☐	_____
Eruvaai	☐	☐	_____
Karuvaai	☐	☐	_____

UYIR THATHUKKAL:

I. Vali:

	Normal	Affected	
Praanan	☐	☐	_____
Abaanan	☐	☐	_____
Viyanan	☐	☐	_____
Udhaanan	☐	☐	_____
Samaanan	☐	☐	_____
Naagan	☐	☐	_____
Koorman	☐	☐	_____
Kirukaran	☐	☐	_____
Devathathan	☐	☐	_____
Dhananjeyan	☐	☐	_____

II. Azhal:

	Normal	Affected	
Anal pitham	☐	☐	_____
Prasaga pitham	☐	☐	_____
Ranjaga pitham	☐	☐	_____
Aalosaga pitham	☐	☐	_____
Saathaga pitham	☐	☐	_____

III. Iyam:

	Normal	Affected	
Avalambagam	☐	☐	_____
Kilethagam	☐	☐	_____
Pothagam	☐	☐	_____
Tharpagam	☐	☐	_____
Santhigam	☐	☐	_____

UDAL THATHUKKAL:

	Normal	Affected	
Saaram	☐	☐	_____
Senneer	☐	☐	_____
Oon	☐	☐	_____
Kozhuppu	☐	☐	_____
Enbu	☐	☐	_____
Moolai	☐	☐	_____
Suronitham/ Sukkilam	☐	☐	_____

ENNVAGAI THERVUGAL:

Naa : _____

Niram : _____

Mozhi : _____

Vizhi : _____

Naadi : _____

Sparisam : _____

Malam : _____

Moothiram :

Neerkuri

Niram : _____

Edai : _____

Manam : _____

Nurai : _____

Enjal : _____

Nei kuri : _____

IN MODERN ASPECTS

HISTORY

Pain

Fever

Trauma

Early morning Stiffness

Fracture

Skin Changes

Raynaud's Phenomenon

Veneral Exposure

HT

DM

Rheumatic Fever

PT

Br. Asthma

Allergy

Sugery

Others (if any)

SYSTEMIC EXAMINATION

Inspection:

Skin over the Joints	:	Normal	☐	Reddish	☐
Joint Swelling	:	Yes	☐	No	☐
MCP, PIP	:	Yes	☐	No	☐
Wrist Joint	:	Yes	☐	No	☐
Elbow Joint	:	Yes	☐	No	☐

Shoulder Joint :	Yes	☐	No	☐
Knee Joint :	Yes	☐	No	☐
Ankle Joint :	Yes	☐	No	☐
MTP Joint :	Yes	☐	No	☐
Cervical Spine :	Yes	☐	No	☐
Muscle Wasting :	Yes	☐	No	☐

Deformities:	**Yes**	**No**
Swan neck deformity	☐	☐
Button hole deformity	☐	☐
Ulnar deviation of the Hand	☐	☐
Foot deformity	☐	☐

Palpation:

	Present	**Absent**
Local Temperature	☐	☐
Tenderness	☐	☐

Movements:

	Yes	**No**
Pain	☐	☐
Crepitus	☐	☐

Restriction of Movements:

Full restriction	☐
Partial restriction	☐
No restriction	☐

Swelling of Joints:

Nil	☐
Mild	☐
Moderate	☐
Severe	☐

Grading of functions:

Grade I ☐ Grade II ☐

Grade III ☐ Grade IV ☐

Subcutaneous nodules

SYSTEMIC EXAMINATION (EXTRA ARTICULAR FEATURES)

Low grade Fever

Lymphadonopathy

Weight Loss

Anorexia

Anaemia and lassitude.

		Yes	No
Episcleritis/ scleritis	:	☐	☐
Rheumatoid Nodules	:	☐	☐
Peripheral Neuropathy	:	☐	☐
Lymphadenopathy	:	☐	☐
Vasculitic Lesions	:	☐	☐
Evidence of local or systemic infection	:	☐	☐

OTHER SYSTEM EXAMINATION:

CNS :

CVS :

RS :

Abdomen :

LABORATORY INVESTIGATIONS:

BLOOD:

TC (Cells/cumm) : ☐☐☐☐☐

DC (%) : P ☐☐ L ☐☐ E ☐☐

Hb (gms%) : ☐☐

E.S.R. (mm/hr) : 1/2 hr ☐☐ 1hr ☐☐

Blood Sugar(mgs%) :

Fasting : ☐☐☐

P.P. : ☐☐☐

Random : ☐☐☐

Blood Urea : ☐☐

Cholesterol : ☐☐

IMMUNOLOGICAL TEST

R.A. Factor : ☐☐

C.R.P. : ☐☐

A.S.O Titre : ☐☐

Anti nuclear antibody **:** ☐☐

URINE:

Albumin : _____

Sugar : _____

Deposits : _____

MOTION TEST:

Ova : _____

Cyst : _____

Occult blood : _____

RADIOGRAPHIC EVALUATION:
ECG
SEROLOGICAL TEST FOR SYPHILIS
SYNOVIAL FLUID ANALAYSIS
ARTHROGRAPHY
SPUTUM FOR AFB

Discharge case sheet Proforma for

"SANTHU VATHAM"

P.G. POTHU MARUTHUVAM DEPARTMENT

GOVT. SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI.

Ward	:	Nationality	:
I. P. No	:	Religion	:
Bed. No	:	Date of Admission	:
Name	:		
Age (Years)	:	Date of Discharge	:
Gender	: M F	Result	:
Occupation	:	Diagnosis	:
Income	:	Medical officer	:
Address	: ……..		
	……..		
	……..		

S. No.	Symptoms	During admission	During Discharge
1.	Pain		
2.	Fever		
3.	Swelling		
4.	Early Morning stiffness		
5.	Restriction of movements		
6.	Muscle wasting		
7.	Deformity		
8.	Rheumatoid nodules		
9.	Loss of appetite		
10.	Disturbed sleep		
11.	Others if any		

CASE – SHEET PROFORMA FOR "SANTHU VATHAM"

Department of Post Graduate – Maruthuavam (Pothu)

Government Siddha Medical College & Hospital

Palayamkottai

O. P. No	:	Treatment starting date	:
Name	:	End of the treatment date	:
Age (Years)	:	No. of days treated	:
Gender	: M F	Diagnosis	:
Occupation	:	Medical officer	:
Income	:		

Address : ……

……

……

Complaints & Duration:

……

……..……

……..

GENERAL EXAMINATION:

Consciousness :

Nourishment :

Body temperature(^{0}F) :

Blood pressure (mmHg) : /

Pulse rate/min :

Respiratory rate/min :

	Yes	No	
Anaemia	☐	☐	_____
Jaundice	☐	☐	_____
Cyanosis	☐	☐	_____
Clubbing	☐	☐	_____
Pedal oedema	☐	☐	_____
Generalised Lymphadenopathy	☐	☐	_____
Engorged veins	☐	☐	_____
JVP ↑	☐	☐	_____

IN SIDDHA ASPECTS:

Nilam :

Kaalam :

Iym Porigal (Sensary organs) :

Kanmenthiriyam (Motor organs) :

Mukkutram(Affected) :

Vatham :

Pitham :

Kabham :

UDAL THATHUKKAL :

ENVAGAI THERVUGAL :

Naa : _____

Niram : _____

Mozhi : _____

Vizhi : _____

Naadi : _____

Sparisam : _____

Malam : _____

MOOTHIRAM :

Neerkuri

Niram : _____

Edai : _____

Manam : _____

Nurai : _____

Enjal : _____

Nei kuri **:** _____

IN MODERN ASPECTS

HISTORY

Pain

Fever

Trauma

Early morning Stiffness

Fracture

Skin Changes

Raynaud's Phenomenon

Veneral Exposure

HT

DM

Rheumatic Fever

PT

Br. Asthma

Allergy

Sugery

Others (if any)

SYSTEMIC EXAMINATION

Inspection:

Skin over the Joints	:	Normal	☐	Reddish	☐
Joint Swelling	:	Yes	☐	No	☐
MCP, PIP	:	Yes	☐	No	☐
Wrist Joint	:	Yes	☐	No	☐

Elbow Joint :	Yes	☐	No	☐
Shoulder Joint :	Yes	☐	No	☐
Knee Joint :	Yes	☐	No	☐
Ankle Joint :	Yes	☐	No	☐
MTP Joint :	Yes	☐	No	☐
Cervical Spine :	Yes	☐	No	☐
Muscle Wasting :	Yes	☐	No	☐

Deformities:	**Yes**	**No**
Swan neck deformity	☐	☐
Button hole deformity	☐	☐
Ulnar deviation of the Hand	☐	☐
Foot deformity	☐	☐

Palpation:

	Present	**Absent**
Local Temperature	☐	☐
Tenderness	☐	☐

Movements:

	Yes	**No**
Pain	☐	☐
Crepitus	☐	☐

Restriction of Movements:

Full restriction	☐
Partial restriction	☐
No restriction	☐

Swelling of Joints:

Nil ☐

Mild ☐

Moderate ☐

Severe ☐

Grading of functions:

Grade I ☐ Grade II ☐

Grade III ☐ Grade IV ☐

Subcutaneous nodules

SYSTEMIC EXAMINATION (EXTRA ARTICULAR FEATURES)

Low grade Fever

Lymphadonopathy

Weight Loss

Anorexia

Anaemia and lassitude.

		Yes	**No**
Episcleritis/ scleritis	:	☐	☐
Rheumatoid Nodules	:	☐	☐
Peripheral Neuropathy	:	☐	☐
Lymphadenopathy	:	☐	☐
Vasculitic Lesions	:	☐	☐
Evidence of local or systemic infection	:	☐	☐

OTHER SYSTEM EXAMINATION:

CNS :

CVS :

RS :

Abdomen :

LABORATORY INVESTIGATIONS:

BLOOD:

TC (Cells/cumm) : ☐☐☐☐☐

DC (%) : P ☐☐ L ☐☐ E ☐☐

Hb (gms%) : ☐☐

E.S.R. (mm/hr) : 1/2 hr ☐☐ 1hr ☐☐

Blood Sugar(mgs%) :

Fasting : ☐☐☐

P.P. : ☐☐☐

Random : ☐☐☐

Blood Urea : ☐☐

Cholesterol : ☐☐

IMMUNOLOGICAL TEST

R.A. Factor : ☐☐

C.R.P. : ☐☐

A.S.O Titre : ☐☐

Anti nuclear antibody **:** ☐☐

URINE:

Albumin : _____

Sugar : _____

Deposits : _____

MOTION TEST:

Ova : _____

Cyst : _____

Occult blood : _____

RADIOGRAPHIC EVALUATION:

ECG

SEROLOGICAL TEST FOR SYPHILIS

SYNOVIAL FLUID ANALAYSIS

ARTHROGRAPHY

SPUTUM FOR AFB

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CASE – SHEET PROFORMA FOR "SANTHU VADHAM"

Department of Post Graduate – Maruthuavam (Pothu)

Government Siddha Medical College & Hospital

Palayamkottai

Ward	:	Nationality	:
I. P. No	:	Religion	:
Bed. No	:	Date of Admission	:
Name	:		
Age (Years)	: ☐☐	Date of Discharge	:
Gender	: ☐M ☐F	Result	:
Occupation	:	Diagnosis	:
Income	:	Medical officer	:
Address	: …….....		
	……		
	……		

Complaints & Duration:

……

……..……

……..

History of Present illness:

……

……..……

……

Past history: ……

Family History :

……..

Social Status: low ☐ Middle ☐ Upper ☐

Habits:		**Yes**	**No**	
Smoker	:	☐	☐	_____
Alcoholic	:	☐	☐	_____
Tobacco chewer	:	☐	☐	_____
Betel nut chewer	:	☐	☐	_____
Food habits	:	V ☐	M ☐	_____

GENERAL EXAMINATION:

Consciousness	:	
Nourishment	:	
Body temperature(^{0}F)	:	☐☐☐
Blood pressure (mmHg)	:	☐☐☐ / ☐☐☐
Pulse rate/min	:	☐☐☐
Respiratory rate/min	:	☐☐☐

	Yes	**No**	
Anaemia	☐	☐	_____
Jaundice	☐	☐	_____
Cyanosis	☐	☐	_____
Clubbing	☐	☐	_____
Pedal oedema	☐	☐	_____
Generalised lymphadenopathy	☐	☐	_____
Engorged veins	☐	☐	_____
JVP ↑	☐	☐	_____

IN SIDDHA ASPECTS

NILAM:

Kurinji	☐	Mullai	☐	Marutham	☐
Neithal	☐	Paalai	☐		

KAALA IYALBU:

Kaarkaalam ☐ KoothirKaalam ☐ Munpani ☐

Pinpani ☐ Ilavenir ☐ Mudhuvenir ☐

MUKKUNAM

Sathuvam ☐ Rajotham ☐ Thamokunam ☐

THEGI

Vatham ☐ Pitham ☐ Kapham ☐ Thontham ☐

IYMPORIGAL / IYMPULANGAL:

	1. Normal	**2. Affected**	
Mei	☐	☐	_____
Vaai	☐	☐	_____
Kan	☐	☐	_____
Mookku	☐	☐	_____
Sevi	☐	☐	_____

KANMENTHIRIYANGAL / KANMAVIDAYANGAL:

	Normal	**Affected**	
Kai	☐	☐	_____
Kaal	☐	☐	_____
Vaai	☐	☐	_____
Eruvaai	☐	☐	_____
Karuvaai	☐	☐	_____

UYIR THATHUKKAL:

I. Vali:

	Normal	**Affected**	
Praanan	☐	☐	_____
Abaanan	☐	☐	_____
Viyanan	☐	☐	_____
Udhaanan	☐	☐	_____

Samaanan	☐	☐	_____
Naagan	☐	☐	_____
Koorman	☐	☐	_____
Kirukaran	☐	☐	_____
Devathathan	☐	☐	_____
Dhananjeyan	☐	☐	_____

II. Azhal:

	Normal	Affected	
Anal pitham	☐	☐	_____
Prasaga pitham	☐	☐	_____
Ranjaga pitham	☐	☐	_____
Aalosaga pitham	☐	☐	_____
Saathaga pitham	☐	☐	_____

III. Iyam:

	Normal	Affected	
Avalambagam	☐	☐	_____
Kilethagam	☐	☐	_____
Pothagam	☐	☐	_____
Tharpagam	☐	☐	_____
Santhigam	☐	☐	_____

UDAL THATHUKKAL:

	Normal	Affected	
Saaram	☐	☐	_____
Senneer	☐	☐	_____
Oon	☐	☐	_____

Kozhuppu	☐	☐	_____
Enbu	☐	☐	_____
Moolai	☐	☐	_____
Suronitham/ Sukkilam	☐	☐	_____

ENNVAGAI THERVUGAL:

Naa : _____

Niram : _____

Mozhi : _____

Vizhi : _____

Naadi : _____

Sparisam : _____

Malam : _____

Moothiram :

Neerkuri

Niram : _____

Edai : _____

Manam : _____

Nurai : _____

Enjal : _____

Nei kuri **:** _____

IN MODERN ASPECTS

HISTORY

Pain

Fever

Trauma

Early morning Stiffness

Fracture

Skin Changes

Raynaud's Phenomenon

Veneral Exposure

HT

DM

Rheumatic Fever

PT

Br. Asthma

Allergy

Sugery

Others (if any)

SYSTEMIC EXAMINATION

Inspection:

Skin over the Joints	:	Normal	☐	Reddish	☐
Joint Swelling	:	Yes	☐	No	☐
MCP, PIP	:	Yes	☐	No	☐
Wrist Joint	:	Yes	☐	No	☐
Elbow Joint	:	Yes	☐	No	☐
Shoulder Joint	:	Yes	☐	No	☐
Knee Joint	:	Yes	☐	No	☐
Ankle Joint	:	Yes	☐	No	☐
MTP Joint	:	Yes	☐	No	☐
Cervical Spine	:	Yes	☐	No	☐
Muscle Wasting	:	Yes	☐	No	☐

Deformities:	**Yes**	**No**
Swan neck deformity	☐	☐
Button hole deformity	☐	☐
Ulnar deviation of the Hand	☐	☐
Foot deformity	☐	☐

Palpation:

	Present	**Absent**
Local Temperature	☐	☐
Tenderness	☐	☐

Movements:

	Yes	No
Pain	☐	☐
Crepitus	☐	☐

Restriction of Movements:

- Full restriction ☐
- Partial restriction ☐
- No restriction ☐

Swelling of Joints:

- Nil ☐
- Mild ☐
- Moderate ☐
- Severe ☐

Grading of functions:

Grade I ☐ Grade II ☐

Grade III ☐ Grade IV ☐

Subcutaneous nodules

SYSTEMIC EXAMINATION (EXTRA ARTICULAR FEATURES)

Low grade Fever

Lymphadonopathy

Weight Loss

Anorexia

Analmia and lassitude.

	Yes	No
Episcleritis/ scleritis :	☐	☐
Rheumatoid Nodules :	☐	☐
Peripheral Neuropathy :	☐	☐
Lymphadenopathy :	☐	☐
Vasculitic Lesions :	☐	☐
Evidence of local or systemic infection :	☐	☐

OTHER SYSTEM EXAMINATION:

CNS :

CVS :

RS :

Abdomen :

LABORATORY INVESTIGATIONS:

BLOOD:

TC (Cells/cumm) :

DC (%) : P L E

Hb (gms%) :

E.S.R. (mm/hr) : 1/2 hr 1hr

Blood Sugar(mgs%) :

Fasting :

P.P. :

Random :

Blood Urea :

Cholesterol :

IMMUNOLOGICAL TEST

R.A. Factor :

C.R.P. :

A.S. Titre :

Anti nuclear antibody :

URINE:

Albumin : _____

Sugar : _____

Deposits : _____

MOTION TEST:

Ova : _____

Cyst : _____

Occult blood : _____

RADIOGRAPHIC EVALUATION:

ECG

SEROLOGICAL TEST FOR SYPHILIS

SYNOVIAL FLUID ANALAYSIS

ARTHROGRAPHY

SPUTUM FOR AFB

CASE – SHEET PROFORMA FOR "SANTHU VADHAM"

Department of Post Graduate – Maruthuavam (Pothu)

Government Siddha Medical College & Hospital

Palayamkottai

O. P. No	:	Treatment starting date	:
Name	:	End of the treatment date	:
Age (Years)	:	No. of days treated	:
Gender	: M F	Diagnosis	:
Occupation	:	Medical officer	:
Income	:		
Address	: ……		
	……		
	……		

Complaints & Duration:

……

……..……

……..

GENERAL EXAMINATION:

Consciousness :

Nourishment :

Body temperature (^{0}F) :

Blood pressure (mmHg) :

Pulse rate/min :

Respiratory rate/min :

	Yes	**No**	
Anaemia	☐	☐	_____
Jaundice	☐	☐	_____
Cyanosis	☐	☐	_____
Clubbing	☐	☐	_____

Pedal oedema	☐	☐	_____
Generalised Lymphadenopathy	☐	☐	_____
Engorged veins	☐	☐	_____
JVP ↑	☐	☐	_____

IN SIDDHA ASPECTS:

Nilam :

Kaalam :

Iym Porigal (Sensary organs) :

Kanmenthiriyam (Motor organs) :

Mukkutram(Affected) :

Vatham :

Pitham :

Kabham :

UDAL THATHUKKAL :

ENVAGAI THERVUGAL :

Naa : _____

Niram : _____

Mozhi : _____

Vizhi : _____

Naadi : _____

Sparisam : _____

Malam : _____

MOOTHIRAM :

Neerkuri

Niram : _____

Edai : _____

Manam : _____

Nurai : _____

Enjal : _____

Nei kuri : _____

IN MODERN ASPECTS

HISTORY

Pain

Fever

Trauma

Early morning Stiffness

Fracture

Skin Changes

Raynaud's Phenomenon

Veneral Exposure

HT

DM

Rheumatic Fever

PT

Br. Asthma

Allergy

Sugery

Others (if any)

SYSTEMIC EXAMINATION

Inspection:

Skin over the Joints	:	Normal	☐	Reddish	☐
Joint Swelling	:	Yes	☐	No	☐
MCP, PIP	:	Yes	☐	No	☐
Wrist Joint	:	Yes	☐	No	☐
Elbow Joint	:	Yes	☐	No	☐
Shoulder Joint	:	Yes	☐	No	☐
Knee Joint	:	Yes	☐	No	☐
Ankle Joint	:	Yes	☐	No	☐
MTP Joint	:	Yes	☐	No	☐
Cervical Spine	:	Yes	☐	No	☐
Muscle Wasting	:	Yes	☐	No	☐

Deformities:	**Yes**	**No**
Swan neck deformity	☐	☐
Button hole deformity	☐	☐
Ulnar deviation of the Hand	☐	☐
Foot deformity	☐	☐

Palpation:

	Present	**Absent**
Local Temperature	☐	☐
Tenderness	☐	☐

Movements:

	Yes	**No**
Pain	☐	☐
Crepitus	☐	☐

Restriction of Movements:

- Full restriction ☐
- Partial restriction ☐
- No restriction ☐

Swelling of Joints:

- Nil ☐
- Mild ☐
- Moderate ☐
- Severe ☐

Grading of functions:

Grade I ☐ Grade II ☐

Grade III ☐ Grade IV ☐

Subcutaneous nodules

SYSTEMIC EXAMINATION (EXTRA ARTICULAR FEATURES)

Low grade Fever

Lymphadonopathy

Weight Loss

Anorexia

Analmia and lassitude.

		Yes	No
Episcleritis/ scleritis	:	☐	☐
Rheumatoid Nodules	:	☐	☐
Peripheral Neuropathy	:	☐	☐
Lymphadenopathy	:	☐	☐
Vasculitic Lesions	:	☐	☐
Evidence of local or systemic infection	:	☐	☐

OTHER SYSTEM EXAMINATION:

CNS :

CVS :

RS :

Abdomen :

LABORATORY INVESTIGATIONS:

BLOOD:

TC (Cells/cumm) : ☐☐☐☐☐

DC (%) : P ☐☐ L ☐☐ E ☐☐

Hb (gms%) : ☐☐

E.S.R. (mm/hr) : 1/2 hr ☐☐ 1hr ☐☐

Blood Sugar(mgs%) :

Fasting : ☐☐☐

P.P. : ☐☐☐

Random : ☐☐☐

Blood Urea : ☐☐

Cholesterol : ☐☐

IMMUNOLOGICAL TEST

R.A. Factor : ☐☐

C.R.P. : ☐☐

A.S. Titre : ☐☐

Anti nuclear antibody : ☐☐

URINE:

Albumin : _____

Sugar : _____

Deposits : _____

MOTION TEST:

Ova : _____

Cyst : _____

Occult blood : _____

RADIOGRAPHIC EVALUATION:

ECG

SEROLOGICAL TEST FOR SYPHILIS

SYNOVIAL FLUID ANALAYSIS

ARTHROGRAPHY

SPUTUM FOR AFB

Examination of Joints & Connective Tissue

Sl. No.	Joints	Pain		Swelling oedema		Redness		Warmth		Crepitus		Stiffness		Restricted movements (or) loss of function		Deformity subluxation contractions ulcers		Muscle spasm, wasting weakness malarise		Subcutaneous nodules cystacalosities (Bony enlargement)	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	Inter phalangeal joint																				
2	Wrist-metacarpo phalangeal joint																				
3	Elbow																				
4	Shoulder acromioclavicular																				
5	Ankle-Subtarsal Midtarsal																				
6	Metatarso phalangeal joint																				
7	Phalanges																				
8	Knee joint																				
9	Spine-Cervical, Thoracic, Lumbar, sacroiliac joint																				
10	Mandibular joint																				
11	Sterno clavincular joint																				
12	Costo vertebral joint																				

CASE SHEET

S. No.	I.P. No.	Name	Age/ Sex	Occupation	Date of Admission	Date of Discharge	Duration of Illness	No. of Days Treated		Total No. of Days Treated	Results
								IP	OP Follow up		
1.	1999	Iyyakuttai	77/M	Farmer	30.07.08	12.08.08	2 years	14	33	47	Poor
2.	2597	Sellaiya	65/M	Farmer	21.08.08	08.09.08	1year	18	30	48	Good
3.	2241	Abupekkar	60/M	Farmer	25.08.08	17.09.08	1year	22	32	54	Good
4.	2311	Sudalai	57/M	Tailor	01.09.08	18.09.08	2 months	18	30	48	Fair
5.	2255	Sakthivel	62/M	Porter	25.08.08	14.09.08	6 months	19	30	49	Fair
6.	2314	Perumal Nadar	65/M	Farmer	01.09.08	18.09.08	6 months	18	30	48	Fair
7.	2236	Arumugam	57/M	Driver	24.08.08	18.09.08	5 months	25	20	45	Good
8.	2395	Ganpathy	59/M	Farmer	10.09.08	24.09.08	7 month	15	28	43	Good
9.	2383	Lakshmanan	60/M	Farmer	09.09.08	30.09.08	6 months	22	20	42	Fair
10.	2570	Fathima Beevi	35/F	Housewife	26.09.08	11.10.08	2 years	15	40	55	Fair
11.	2659	Vembu	60/F	House Wife	07.10.08	24.10.08	1 year	17	25	43	Good
12.	2468	Veellayammal	60/F	HouseWife	18.09.08	04.10.08	3 years	16	30	46	Good
13.	2442	Mookammal	45/F	House Wife	16.09.08	06.10.08	1 year	20	32	52	Fair
14.	2350	Kuzhalalmani	57/F	House Wife	04.09.08	29.09.08	9 months	25	20	45	Good
15.	2348	Siriya Pushbam	65/F	House Wife	04.09.08	29.09.08	2 years	25	22	47	Fair
16.	2280	Malathi	35/F	Tailor	28.08.08	12.09.08	1 year	14	32	46	Fair
17.	2101	Grace	63/F	House Wife	13.08.08	15.09.08	2 years	32	25	57	Good
18.	2222	Easkiammal	60/F	House Wife	22.08.08	16.09.08	10 months	25	27	53	Fair
19.	2313	Saroja	55/F	House wife	01.09.08	16.09.08	1 year	16	28	44	Fair
20.	2272	Patchiammal	60/F	House Wife	27.08.08	04.09.08	9 months	7	42	49	Good

LABORATORY INVESTIGATION REPORTS (IP)

S. No	I.P. No.	Blood Report										Urine			Stool		Blood Sugar	Serum Cholestrol	Blood urea mg%	RA Factor	
		TC Cells/ Cumm	DC %			ESR				HB%		Alb	Sug	Dep	Ova	Cyst				BT	AT
			P	L	E	B ½ hr	T 1 hr	A ½ hr	T 1 hr	BT	AT										
1	1999	7,500	60	37	3	5	10	2	5	50	60	Nil	Nil	Few. epi cells	Nil	Nil	91	131	20	-	-
2	2597	7,700	65	30	5	18	32	8	12	72	74	Nil	Nil	NAD	Nil	Nil	98	146	17	-	-
3	2241	8,700	64	32	4	7	15	4	10	68	70	Nil	Nil	NAD	Nil	Nil	65	149	-	-	-
4	2311	7,900	56	42	2	1	3	1	2	71	72	Nil	Nil	NAD	Nil	Nil	90	130	-	+ve	+ve
5	2255	8,400	59	40	1	20	40	8	15	75	76	Nil	Nil	NAD	Nil	Nil	65	175	-	-	-
6	2314	7,900	50	48	2	6	12	2	8	76	78	Nil	Nil	NAD	Nil	Nil	74	136	-	-	-
7	2236	8,900	70	26	4	5	12	2	8	74	74	Nil	Nil	NAD	Nil	Nil	98	150	-	-	-
8	2395	9,200	60	38	2	2	4	2	4	68	70	Nil	Nil	Occ. Pus cells	Nil	Nil	120	167	-	-	-
9	2383	8,400	66	32	2	6	12	5	8	72	74	Nil	Nil	2-3 epi cells	Nil	Nil	175	165	-	-	-
10	2570	8,300	64	35	1	20	40	10	15	60	65	Nil	Nil	1-2 epi cells	Nil	Nil	90	75	-	+ve	+ve
11	2659	9,000	66	32	2	7	14	4	8	70	72	Nil	Nil	Occ. Epi cells	Nil	Nil	92	191	-	-	-
12	2468	9,000	48	48	4	15	38	8	12	71	72	Nil	Nil	Occ. epi cells	Nil	Nil	83	145	-	-	-
13	2442	8,700	60	38	2	5	10	2	5	68	70	Nil	Nil	Occ. epi cells	Nil	Nil	68	200	-	+ve	+ve
14	2350	7,000	58	40	2	6	12	3	6	70	71	Nil	Nil	NAD	Nil	Nil	108	192	-	-	-
15	2348	9,600	48	50	2	6	12	2	8	70	72	Nil	Nil	1-2 epi cells	Nil	Nil	96	218	-	-	-
16	2280	10,200	60	25	5	8	15	4	8	72	74	Nil	Nil	NAD	Nil	Nil	75	181	-	+ve	+ve
17	2101	9,000	66	32	2	6	12	4	8	70	72	Nil	Nil	NAD	Nil	Nil	78	190	-	-	-
18	2222	8,300	68	29	3	20	35	10	16	72	72	Nil	Nil	Occ. epi cells	Nil	Nil	86	186	-	-	-
19	2313	9,000	55	40	5	12	25	8	12	60	62	Nil	Nil	Few epi cells	Nil	Nil	114	168	-	+ve	+ve
20	2272	8,000	55	40	5	15	30	10	12	58	60	Nil	Nil	NAD	Nil	Nil	81	183	28	-	-

CASE SHEET

S. No.	O.P. No.	Name	Age/Sex	Occupation	Duration of Illness	Treatment Starting date	End of the treatment date	No. of Days Treated	Results
1.	48655	Tirunavukkarasu	39/M	Driver	6 months	09.08.08	13.10.08	64	Good
2.	56769	Ganpathy	54/M	Farmer	9 months	23.09.08	21.11.08	60	Fair
3.	58848	Krishnan	69/M	Farmer	1 year	03.10.08	28.11.08	56	Fair
4.	48154	Selvam	34/M	Farmer	10 months	07.08.08	28.09.08	51	Fair
5.	47399	Abdul Vagabu	55/M	Cooli	8 months	04.08.08	25.09.08	51	Good
6.	46525	Krishan	53/M	Tailor	10 months	30.07.08	25.09.08	56	Fair
7.	48394	Selvi	47/F	Housewife	6 months	08.08.08	05.10.08	57	Good
8.	46553	Bagavathi	60/F	Housewife	1 year	30.07.08	20.09.08	51	Poor
9.	48379	Valli	26/F	Housewife	6 months	08.08.08	05.10.08	58	Fair
10.	47680	Velammal	61/F	Housewife	9months	05.08.08	30.09.08	55	Fair
11.	58751	Lakshmi	55/F	Housewife	7 months	03.10.08	20.11.08	48	Fair
12.	52965	Kumari	55/F	Teacher	6 months	01.09.08	28.10.08	58	Good
13.	59515	Shanthi	65/F	House wife	10 months	07.10.08	30.11.08	53	Poor
14.	60319	Malliga	48/F	House wife	3 months	13.10.08	30.11.08	48	Good
15.	60966	Ulagammal	45/F	Tailor	6 months	16.10.08	30.11.08	45	Fair
16.	60718	Ramalakshmi	67/F	Housewife	10 months	15.10.08	30.11.08	46	poor
17.	58782	Mahumitha	38/F	Housewife	5 months	03.10.08	25.11.08	53	Fair
18.	59537	Kanthammal	67/F	House Wife	7 months	07.10.08	30.11.08	54	Fair
19.	64116	Lakshmi	65/F	House Wife	10 months	05.11.08	10.12.08	35	Fair
20.	46599	Shanmugammal	48/F	House wife	1 year	30.07.08	18.09.08	49	Good

LABORATORY INVESTIGATION REPORTS (OP)

S. No.	O.P. No.	Blood Report										Urine			Stool		Investigation mg%			RA Factor	
		TC Cells/ Cumm	DC %			ESR				HB%		Alb	Sug	Dep	Ova	Cyst	Blood Sugar	Serum Cholesterol	Blood urea	BT	AT
			P	L	E	B ½ hr	T 1 hr	A ½ hr	T 1 hr	BT	AT										
1	48655	8,700	69	30	1	9	15	5	10	88	89	Nil	Nil	NAD	Nil	Nil	94	182	17	-	-
2	56769	9,000	55	40	5	5	10	2	4	78	79	Nil	Nil	NAD	Nil	Nil	115	181	-	-	-
3	58848	9,200	65	30	5	8	15	4	10	68	70	Nil	Nil	NAD	Nil	Nil	67	192	-	-	-
4	48154	7,900	60	35	5	4	6	2	3	72	74	Nil	Nil	NAD	Nil	Nil	101	218	20	+ve	+ve
5	47399	9,100	60	36	4	7	15	4	7	88	89	Nil	Nil	NAD	Nil	Nil	110	239	19	-	-
6	46525	9,100	60	37	3	4	8	2	4	78	80	Nil	Nil	NAD	Nil	Nil	106	218	23	-	-
7	48394	9,200	58	34	8	9	18	6	8	73	75	Nil	Nil	1-2 epi cells	Nil	Nil	78	128	-	-	-
8	46553	8,200	65	30	5	2	5	2	4	70	72	Nil	Nil	NAD	Nil	Nil	96	165	15	-	-
9	48379	9,200	69	30	1	6	13	3	8	65	68	Nil	Nil	NAD	Nil	Nil	102	174	-	+ve	+ve
10	47680	7,400	55	40	5	10	25	5	10	74	76	Nil	Nil	Few epicells	Nil	Nil	87	189	-	-	-
11	58751	9,400	64	32	4	2	4	2	4	68	70	Nil	Nil	Few epicells	Nil	Nil	72	175	-	-	-
12	52965	8,800	59	40	1	12	26	7	12	74	76	Nil	Nil	NAD	Nil	Nil	100	209	-	-	-
13	59515	9800	52	30	8	10	22	8	16	70	72	Nil	Nil	NAD	Nil	Nil	102	160	-	-	-
14	60966	7,900	68	28	4	15	20	8	10	78	80	Nil	Nil	2-4 epi cells	Nil	Nil	76	150	-	+ve	+ve
15	60319	8,900	65	32	3	6	12	3	8	71	73	Nil	Nil	1-2 epi cells	Nil	Nil	72	190	-	-	-
16	60718	8,400	65	32	3	2	4	2	4	70	72	Nil	Nil	2-3 epi cells	Nil	Nil	81	170	-	-	-
17	58782	8,600	55	40	5	8	15	4	8	82	82	Nil	Nil	Few epicells	Nil	Nil	91	175	-	+ve	+ve
18	59537	8,200	55	40	5	5	10	2	4	72	74	Nil	Nil	Few epicells	Nil	Nil	84	150	-	-	-
19	64116	7,200	58	40	5	20	35	10	15	54	58	Nil	Nil	2-4 epi cells	Nil	Nil	91	168	-	-	-
20	46599	8,400	55	40	5	5	10	2	4	72	74	Nil	Nil	NAD	Nil	Nil	86	171	23	+ve	+ve

Examination of Joints & Connective Tissue

Sl. No.	Joints	Pain		Swelling oedema		Redness		Warmth		Crepitus		Stiffness		Restricted movements (or) loss of function		Deformity subluxation contractions ulcers		Muscle spasm, wasting weakness malarise		Subcutaneous nodules cystacalosities (Bony enlargement)	
		BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	Inter phalangeal joint																				
2	Wrist-metacarpo phalangeal joint																				
3	Elbow																				
4	Shoulder acromioclavicular																				
5	Ankle-Subtarsal Midtarsal																				
6	Metatarso phalangeal joint																				
7	Phalanges																				
8	Knee joint																				
9	Spine-Cervical, Thoracic, Lumbar, sacroiliac joint																				
10	Mandibular joint																				
11	Sterno clavincular joint																				
12	Costo vertebral joint																				